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SCHOOL OF EDUCATION
UNIVERSITY OF BIRMINGHAM

THE CHANGING ROLE OF TEACHERS IN THE LAST 100 YEARS*

by SIR RONALD GOULD

formerly General Secretary, the National Union of Teachers

I. INTRODUCTION

GEORGE Bernard Shaw once agreed to speak on "What's wrong with English Education" but for some reason or other he arrived late for his appointment. So this is how he began: "Ladies and Gentlemen, I was supposed to speak on 'What's wrong with English Education' but I have only three minutes for my speech so I'll speak on 'What's right with English Education'."

Like George Bernard Shaw most English progressives, even today, appear to find much wrong and little right with English education. I've done my share of complaining at the slow development of nursery schools, the improvement of school buildings, the reduction in the size of teaching groups and the introduction of purpose-built comprehensive schools. Of course, there is still much wrong with English Education—that is when you measure what is against what might be.

But if you measure what is against what was there is much that has been improved. And certainly so far as the treatment of teachers is concerned, with Sydney Smith I can say

The good of other times let others state
I think it lucky I was born so late.

Perhaps the easiest way of showing how teachers have progressed is to take four of the major objectives as defined by teachers collectively when they formed the N.U.T. one hundred years ago and to examine the progress since made. The four objectives were

1. to improve salaries and to obtain a superannuation scheme,
2. to obtain security of tenure, the right of appeal, freedom from

* Public lecture given at the School of Education, University of Birmingham, 1970 to mark the centenary of the 1870 Education act.

compulsory extraneous duties and what they described as "obnoxious interference",

3. to establish a register of teachers or, if you like, to make teaching a profession, and
4. to abolish the Revised Code or, if you like, payment by results.

I will take each in turn, beginning with salaries and superannuation.

2. SALARIES

One hundred years ago, salaries were deplorably low. In 1860 the Rev. C. Daymond, Principal of Peterborough Training College, stated that "school teachers are confessedly in the ranks of underpaid labourers".

This was not surprising, for each body of Managers fixed the salaries of teachers. The school's income consisted of anything derived from trusts, from school fees and from government grant and from these resources the teachers were paid, the school was heated, lit and kept clean, and books, etc. were purchased. The first President of the National Union of Teachers, Mr John James Graves, for example, became the Headmaster of the Lamport School in Northamptonshire in 1851 at the tender age of 19. His salary was £30 per annum, and his wife's £15 per annum, and £5 were allocated to the couple for coal. The joint salary was raised from £45 to £60 per annum in 1859.

Perhaps to quote one example is misleading. A better, though not certain, guide is the Newcastle Commission who discovered in 1861 that the average salaries received by a sample of certificated masters was £94, and of certificated mistresses £62. It is fairly certain, however, these were over-estimates, for 31 years later the average salaries received by certificated masters and mistresses in Church schools were £67 and £47 respectively, though heads of schools received more.

Indeed, the combination of low income to the schools, and local decisions by school boards or governors and later by Local Authorities on the level of teachers' salaries produced a chaotic and unsatisfactory picture, which persisted until the end of World War One. Two illustrations from my own experience will confirm this. I began teaching in 1924. My headmaster told me that during the 1914-18 war he had left the headship of a village school where the remuneration was £90 per annum for the post he then occupied

which gave him £95 per annum. And an uncertificated colleague on the same staff told me that in 1900 he had left the Methodist School which was two miles away from his present post because the change lifted his salary from £60 to £65 per annum.

Thus it was not surprising that prior to World War One teachers were expressing vigorously their discontent. In 1913 Hertfordshire, for example, was paying its teachers on an individual basis "according to the Authority's estimate of the teacher's service, capability and character". For three years the teachers had tried to persuade the Authority to pay teachers by category, i.e. to adopt a scale of salaries, but when peaceful persuasion failed the teachers went on strike, and won.

During the war, the N.U.T. produced its own scales and called upon the Board of Education "to express publicly its approval of the scales". One strike at least reinforced the appeal. It was held in the Rhondda and as a result the scales for certificated men which ran from £80 to £150 were raised to £150 to £350 per annum. But conditions on the whole were bad. A Board of Education statement in 1917 showed that just over 200 teachers received 10s., 8,624 less than £2 and 3,941 less than £3 a week.

Mr H. A. L. Fisher, the then President of the Board, responded to these manifestations of discontent in two ways. Realising the discontent was justified (which by the way some of his successors have not) he introduced the Fisher Percentage Grant system, which was deliberately designed to encourage wise expenditure and especially on teachers' salaries, and he called upon the Local Authority and teachers' organisations to set up a negotiating body "to secure the orderly and progressive solution of the salary problem in Public Elementary Schools by agreement on a national basis".

Here was a revolution indeed! Settlements by agreement, and not settlements imposed by employers! Settlements on a national basis, not on the basis of each local authority, so enabling recruitment and distribution of teachers to be planned on a national basis!

Of course, Mr Fisher was right. This was a logical way out of the existing salary conflicts. But even national bargaining was not acceptable to all local authorities, though to their credit the majority were willing to follow national recommendations. The Burnham Committee (so called because the chairman of the negotiating committee was Lord Burnham) met and agreed upon suitable scales, and recommended them to Local Authorities for their acceptance and implementation. By 1921, 260 Local Authorities had agreed to pay the

scales, so accepting the moral authority of agreements made nationally by their representatives. The teachers, not unnaturally, used pressure on recalcitrant authorities to adopt the scales. In two cases, Southampton and Gateshead, where the authorities refused to pay the allocated scales, teachers went on strike and the schools were closed. The strikes were successful, and it was clear that national settlements were now becoming firmly established.

Unfortunately, however, an economic crisis in 1922 caused a setback to teachers' hopes. Economies were made: the Geddes Axe was swung, and the teachers, realising that if they made no gesture national bargaining was in danger, accepted a voluntary cut of 5% in salaries. The Local Authorities thereupon placed on record their appreciation of the public-spirited action of the teachers. But the Lowestoft Authority was not content with a 5% cut; they demanded 10% and when this was refused, dismissed 167 teachers and attempted to import substitutes from outside. This ruse failed, for the Lowestoft parents supported the teachers, and welfare centres were opened to cater for the children's interests. When the Board of Education warned the authority that their grant would be in danger if they persisted in the course of action they had decided upon, Lowestoft yielded.

In 1924, the Local Authorities generally demanded in the Burnham Committee a cut of 15% in the salary bill. The teachers refused, so the issue went to arbitration. Lord Burnham recommended slightly less favourable scales than those obtaining but saved nothing like the 15% asked by the Authorities.

In 1928 the Abertillery Local Authority proposed a 10% cut in their teachers' salaries, and when this was resisted, dismissed 253 teachers. Fortunately, a council election was held and the new council reverted to the status quo. This marked real progress: unilateral breaches of national salary agreements were becoming rarer and more difficult to sustain. The Burnham agreements were becoming more and more binding on Authorities.

Another financial crisis came in 1931, and the May Committee recommended the National Government to cut teachers' salaries by 15%. The teachers resisted and the Government imposed a 10% cut. A campaign which lasted four years demanded a restoration of the cuts. Meetings were held: M.P.s were lobbied: a Petition signed by 202,361 people was presented and in 1935 uncut salaries were paid. Not unnaturally, when war broke out, the cost of living rose and teachers sought amelioration through war bonuses. These were

generally inadequate. But when Mr Butler was preparing his Education Bill, discussions on the future of the Burnham Committees took place. Two matters were now clear. First, individual Local Authorities now paid without demur whatever was recommended by the Burnham Committee so Mr Butler agreed that when a Burnham Agreement had been reached and he approved, an Order should be made compelling all Authorities to pay the recommended scales. Secondly, if the old concept of elementary schools for the whole school life of 90% of the children and elementary followed by secondary schools for 10% of the children was to be superseded in favour of every child passing through both primary and secondary schools, then separate Burnham Committees for Elementary and Secondary schools had to give way to a unified Burnham Committee for all teachers in primary and secondary schools.

And this is the system still in use. And what do I think of it after more than 30 years work within it? What is all important is that settlements are reached by discussion between employers and employed. I know of no better way of resolving differences. Certainly I do not think a Review Body like the doctors had or reference to the Prices and Incomes Board are improvements. They are worse in this respect: employees are not present at the actual time of decision. Basically, then, Burnham is good, though its procedures and composition may well change with the passage of time. The main problem in any public service negotiating body, however, is the pressure on representatives from their constituents. In times of economic stress like the present, the pressure of governments and Local Authorities is considerable. This is what is making negotiations difficult. And yet, despite this, is not the history of salaries a record of progress?

3. SUPERANNUATION

Next I turn to superannuation. In the year 1870 the National Union of Teachers declared that one of its aims should be the establishment of a suitable pension scheme. Five years later, there was so much agitation about this that Parliament voted £5,500 to aid older teachers in retirement. The trivial sum voted could do nothing but assist the very worst cases on a charitable basis. In 1898 the first Teachers' Superannuation Contribution Act was passed basing pensions on the joint contributions of the teacher and the Government. This Act, even though it had many deficiencies, was welcomed by teachers because "the knowledge of the certainty of a Govern-

ment pension will give a peace of mind that cannot be measured in pounds shillings and pence".

Not until 1912 was that Act improved, but in 1918 a much more satisfactory pension scheme was approved by Parliament. It was non-contributory for teachers, and the benefits were roughly the same as they are now. But because of the country's economic difficulties in 1922 the teachers were called upon to make a 5% contribution. This rankled with teachers who felt they had been unjustly treated, and when in 1956 the Government threatened to increase the contribution to 6%, the teachers were even more incensed. In the end the Bill was forced through the House of Commons, but the teachers secured some increased benefits and subsequently a fairly good salary settlement which mitigated the effect of the increased contribution.

And now to-day, teachers enjoy superannuation benefits similar to those of many other public servants. It would be an advantage to the government and local authorities if the scheme could be made non-contributory, for a vast amount of paper work would then be avoided. But this is difficult to achieve except at a time when every teacher gets a big salary increase. I would not be surprised to see this mooted at some time or other. Nor, if another Labour Government achieves power, would I be surprised at the introduction of a substantially improved citizens' pension scheme which might involve modifications of the teachers' scheme, but this problem, with the change of Government, is not now imminent.

4. SECURITY OF TENURE

Next I turn to security of tenure. In these days, when teachers' tenure is only threatened by gross inefficiency or crime, it is a little difficult to realise how insecure teachers were a hundred years ago. Indeed it would be a shock to many English teachers to realise how insecure are some teachers overseas to-day.

Under the Education Act of 1870 teachers held office only "during the pleasure of the Board". So when a Board or Body of Managers found no pleasure in employing a teacher, he was often dismissed. Odd though this may seem to us the advent of a new vicar sometimes meant the departure of the old schoolmaster. Indeed in the first year of its existence the N.U.T. won a legal case against a vicar who for no valid reason had dismissed a teacher. Teachers were sometimes dismissed for not showing due respect to their employers, for failing to undertake extraneous duties, for attempting to secure regular attendance, and for buying provisions at shops other than those

owned by managers or board school members. As late as 1881, when the N.U.T. surveyed four school districts it was discovered that one third of the teacher's jobs depended on extraneous duties.

Ten years later, however, the N.U.T. Executive declared that if a teacher's post were lost because of his refusal to undertake extraneous duties, a grant would be paid him from the Sustentation Fund and his post would be black-listed, i.e. others would be persuaded not to apply for the post. Two years later, a Register of offending schools was prepared, and teachers were warned against applying for posts in them. Then whenever a Board of Managers broke a contract illegally legal action was taken. All these actions strengthened the teachers' security of tenure.

But whilst it became more difficult to dismiss teachers capriciously, it was still not uncommon to appoint teachers who offered to undertake extraneous duty. When I was a young teacher, a Manager confessed to me that an applicant for a headship was successful because he was willing to play the church organ, train the choir and act as Sunday School superintendent. The only effective way to prevent such behaviour is for teachers themselves to be professional in their applications and interviews, and fortunately most of them are now.

But the right of teachers to be able to take part in what out-of-school activities they please, and especially in politics, without any threat to their tenure is difficult to establish and maintain—especially in time of stress. In the General Strike of 1926 a Communist teacher was imprisoned for spreading what was alleged to be sedition, and the Board of Education withdrew her certificate. For years the N.U.T. agitated for its restoration and ultimately they succeeded and she achieved a distinguished record in the teaching profession. During the immediate post-war years some Local Authorities, like Bury and Southend, refused to employ conscientious objectors. Ultimately, after agitation by the N.U.T., the ban was lifted. In 1949, Middlesex decided it would not appoint Communists as Head Masters. Years of agitation followed, until a change in the political control of the Council reversed the decision.

It should be noted, however, that all these actions were taken against small and unpopular minorities, and this is where freedom is generally threatened. And this is where freedom must be defended. For if a man can be penalised because he is a conscientious objector or a communist, why should he not be penalised if he is a Mormon, or a Seventh Day Adventist, or a Methodist, or an Anglican, or Labour, Liberal or Conservative? In a profession, either you must believe tha

if the professional work is well done, all political and religious beliefs must be tolerated or you will find yourself on the slippery slope and carried to a point where all appointments depend on conformity to local political and religious feeling. Yes, in this sphere enormous advances have been made but "The battle for freedom is never won, and the field is never quiet."

5. TEACHERS' REGISTER

The third objective of teachers in 1870 was to establish a Register of teachers and so make teaching a profession.

These were incredibly lofty objectives. For on the one hand, the middle and upper classes resisted lifting teachers who had emerged from the working classes much above that level. Thus there were attempts to limit the quality of their training, and to prevent them being promoted to secondary schools and to the Inspectorate. And on the other hand, their status was dragged down by the masses of unqualified and partially qualified teachers, and the inadequacy of their own training.

The reasons for all this were many and complex. It is difficult to-day to grasp that when Robert Raikes and others developed Sunday schools they were (at best) tolerated by some because they did not interfere with the employment of children and (at worst) opposed because it was feared they would increase discontent and foment rebellion, or cause the working classes to despise manual labour and consequently take away employment from the middle classes. It is surprising, then, that there were many who wanted to put and to keep the elementary teacher in his place?

It must be admitted, too, that even leaders of the churches wanted children to be taught but little. In 1800 the Bishop of Rochester told the House of Lords that "schools of Jacobinical politics abound in this country. In these the minds of many of the lowest orders are taught to despise religion and the laws of subordination." And three years later the Bishop of London declared that "men of considerable ability say that it is safest for both the government and the religion of the country to let the lower classes remain in that state of ignorance in which nature has originally placed them". If then education was held to be the means of undermining religion, government and the class structure and attacked for this, the teachers, even the most able and dedicated, could hardly escape similar censure. But of course many teachers were neither dedicated nor able. Dame Schools (at best) provided only instruction in reading, writing,

arithmetic and religion. At worst, they were merely child-minding institutions. Dickens describes one such school in *Great Expectations*:

Mr Wopsle's great-aunt kept an evening school in the village; that is to say she was a ridiculous old woman of limited means and unlimited infirmity, who used to go to sleep from six to seven every evening, in the society of youth who paid twopence per week each, for the improving opportunity of seeing her do it.

Nor were the Charity Schools and the teachers working in them much better. This, too, is not really surprising for the impulse to establish Charity Schools was exactly the same as supported missions—to convert the heathen to Christian morality. And to do that churchgoing was a better recommendation than a well-stored mind. Even the Society for Promoting Christian Knowledge, that tried to maintain some standards in employing teachers, laid down but two of an educational character. Their masters, they claimed, should have “a good genius for teaching” and should “write a good hand and understand the grounds of arithmetic”. But the standards for mistresses were lower: given the genius for teaching they could manage without the skills of writing and arithmetic.

So Mandeville's description of Charity School teachers must have been near the mark. They were “wretches of both sexes . . . that from a natural antipathy to working, have a great dislike to their present employment, and perceiving within a much stronger inclination than ever they felt to obey others, think themselves qualified, and wish from their hearts to be masters and mistresses of Charity Schools”. Obviously such people made anything like professional status unobtainable.

Nor did Lancaster and Bell's monitorial system, which was really the adaptation of factory methods to education, help much to raise the status of teachers. The employment of vast numbers of monitors was but a reflection of Lancaster's opinion that “Anyone who can read and write can become a teacher”.

The establishment of a few Training Colleges, however, was a move in the right direction, but large numbers of unqualified teachers were still employed. Many abortive attempts were made in the latter part of the nineteenth century to establish a Register of Teachers. They were all baulked because teaching was not yet a definable profession and because secondary teachers either wanted none but secondary teachers on the register, or two lists, one for elementary and the other for secondary teachers, and to these proposals elementary teachers were implacably opposed.

Attempts to eliminate the totally unqualified were constantly made, but all to no avail. Even as recently as in 1911, 60,000 teachers with partial qualifications were employed, and in many rural areas many teachers had no qualifications at all. When I began teaching in Somerset, there were three ways of entering elementary teaching: by training and qualification and becoming a Certificated teacher; by obtaining a school certificate, reaching the age of 18 and becoming an Uncertificated teacher; or by being a woman over 18 and vaccinated and becoming a Supplementary teacher. Indeed, apart from the Head teacher, I was the only qualified teacher on the staff.

It was not until the end of World War Two that the category of Supplementary teacher was abolished and that no new entrants into the ranks of Uncertificated teachers were permitted. Unfortunately, because of the shortage of teachers, a new category called Temporary teachers was introduced. These were people aged 18 or over, who proposed to train as teachers, and who were allowed to teach a few years before entering Training College.

Last year, however, the category of Temporary teachers was abolished, and the possibility of a Teachers' Register, indeed a Teacher's General Council, was welcomed by the Secretary of State. And he decided, too, that graduates must train.

These were tremendous advances. The hopes of 100 years are now being realised. All teachers will be trained and will have had some higher education. All may be served by a General Council. These are enormous strides towards a more unified, educated and respected profession, and are fulfilling at long last the hopes of the teachers of 1870.

6. THE ACADEMIC FREEDOM OF THE TEACHER

The fourth and last objective of the teachers of a century ago was to abolish the Revised Code, or if I can put this positively, to allow teachers to teach.

This is somewhat difficult to explain in simple terms, but I must try. The Monitorial system as I have already shown was a way of teaching children on the cheap. But the system had been somewhat liberalised by the employment of some trained teachers. However, the costs of education were escalating by no less than £100,000 a year, so the Government set up a Commission under the chairmanship of the Duke of Newcastle, who recommended, *inter alia*, that the prospects and position of the teacher should depend to a large extent on the result of an annual examination of the pupils.

As a result Robert Lowe fixed a grant to School Managers for every child in their schools: a full grant of 6s. 6d. per week for every child under 6 without examination, and 6s. 6d. per week for children over 6 and 12s. od. for older children up to the age of 12, subject to a deduction for unsatisfactory attendance and for unsatisfactory performance in the annual examination in reading, writing and arithmetic. Lowe claimed that this Revised Code ensured that if education were not efficient it would be cheap. He was right, at least as to cheapness. In three years the grant fell by 20%.

This system, established in 1862 (but modified in detail from time to time), was consistently opposed by teachers, but it was vigorously supported by the Education Department, School Boards and so called educationists, so much so that it was not abolished until the end of the century.

Now why were teachers so bitterly opposed to this system? Primarily because it was unjust to teachers and children. Was it not unjust to teachers and children, asked Mr J. J. Graves, later the first President of the N.U.T., to try "to make all children of the same age equal in point of achievement", to have children aged 6 examined, and to be expected "to produce results when they have no opportunity to bring means to work—to teach children when they do not come to school"?

At about the same time the Rev. C. H. Bromby addressed these sad words to London teachers: "Farewell, a meeting of teachers like this, men of thoughtfulness and high purpose and holy faith. Other men must take your places. Mechanical pedagogues who, to force children to the standard of the 3 R's, must call back the rod and the ferrule, those instruments of torture which enlightened teachers had discarded. Other men, not you will be wanted now. Men to teach words not things, sounds not realities."

All this sounds like the purple prose of a somewhat unbalanced man, but if any of you had been teachers then, and you had known that the income of your Managers or School Board largely depended on the result of the annual examination, that your income depended on their income, and that your chance of getting promotion would depend on how well you had earned grants in the past, would you have had any alternative but to strive with might and main to get good examination results? You might have felt there was no direct relationship between the quality of your work and the results obtained: you might have felt sorry you had to put pressure on the weak, the dull and the backward, but I fear you would have struggled to secure

good examination results, whatever else and whoever else suffered.

And of course, when teachers set out to achieve examination results, they read the rules and use every ruse to attain their ends.

First, they had to eliminate absenteeism. Here is a letter a Head teacher sent to parents:

Dear Mr and Mrs —

I send this note to ask you to exert yourselves in every possible manner, so that your children may attend school regularly until the Exam. is over. It is to be held on Nov. 25, and I am sure it is your desire as it is mine that the children should pass excellently, which has a very important influence on their future welfare, and which you know cannot be done without their regular attendance. I would ask you also to look to their home lessons and see that they are done well before brought back. Hoping you will concur in what I wish.

I am, Yours Respectfully, J.S.M. (Master)

Then, secondly, since the rules allowed exemptions from the examination for pupils who for good reason should not be examined, a carefully prepared list of these with reasons appended was handed to the Inspector. If he agreed with the Head teacher he wrote "E" for "Exempted" against the child's name: if he did not he wrote "N.E." for "Not Exempted" and then all the children on the list forfeited grant.

This sometimes had its humorous side, as the following school mistress' account of Faddy, the Inspector at a girls' school, shows:

During the morning Faddy expresses his desire, as usual, to see the exceptions: they have been standing by the while, sucking their thumbs with vacuous stare. No part of his duty gives Faddy greater delight than weighing out, probing, and testing these candidates for exemption; and it is not unusual for him to cavil and haggle for half an hour over half a dozen helpless-looking weaklings, although each of the cases has been thoroughly investigated months ago by the managers and myself.

If Faddy be unsuited for every other department of his duties, he is certainly at home among the exceptions. Fixing his glassy stare upon the first girl, he dwells long upon her perplexed countenance, as though involved in a psychological quandary, and then, turning to me says—

"Deah me! you have her down 'Deficient in intellect'; she seems fairly intelligent. Howevah, I will question her, to see if it be as you say."

Pulling out his gold hunter, he says—

"Now, little girl, tell me, what is this?"

"A watch!" immediately retorts the deficient one.

"Deah me!" frowns Mr Faddy, "I could not think of excusing *this* child

from the examination. She is quite a sharp child—quite a sharp child!"

Seeing the look of dubiousness upon my face, he proceeds—

"Howevah, I will put anothah question to her just to convince you, Miss X —. Now, little girl, tell me, what is my watch made of?"

Without a second's consideration the weakly one blurts out—

"Brass, sir!"

Casting a look of ineffable scorn towards her, he hastily returns his watch to his fob and ejaculates with much emphasis—

"Deah me! a bad case—a very bad case. I will excuse her by all means, poor girl! Obviously deficient: I saw it at once!"

It is worthy of note that he passes the remaining exceptions without comment, and as he strikes out the names on the schedules he glances again and again with great severity at the simple one who thought his gold hunter made of brass.

But thirdly, and most important of all, the teacher geared all the work of the school to producing a good examination result, regardless of boredom, narrowness and cruelty.

In Dickens' *Hard Times* he describes its effects. Sissy had been brought up with horses all her life in Sleary's circus, but when Gradgrind asks her to define a horse she is nonplussed. Gradgrind turns to his prize pupil Bilzer who reels off the information Gradgrind requires.

"Quadruped. Graminivorous. Forty teeth, namely twenty-four grinders, four eye-teeth, and twelve incisive. Sheds coat in the spring; in marshy country sheds hoofs too. Hoofs hard but requiring to be shod with iron. Age known by marks on mouth."

"Now girl number twenty," said Mr Gradgrind, "you know what a horse is."

And we know, even if Girl number twenty did not, why such methods were used.

But the most devastating condemnation of all came from Matthew Arnold, H.M.I., who, unlike some of his colleagues, vigorously opposed payment by results. In his Annual Report of 1869 he wrote:

During the School year more than 25,000 children passed under my inspection; of these, about 13,000 were presented for examination grants.

The total rate of failure which in 1866-7 was 13 per cent, rose in 1867-8 to 14.56 per cent, but declined in 1868-9 to 11.3 per cent. Of last year's failures 20 per cent were in arithmetic, 7.7 per cent in writing, and 6 per cent in reading.

This gradation not ill represents the degrees of difficulty in teaching by rote the three matters of arithmetic, writing and reading. I have repeatedly said that it seems to me the great fault of the Revised Code, and of the famous plan of *payment by results*, that it fosters teaching by rote; I am of that opinion still. I think the great task for friends of education is, not to praise *payment by results*, which is just the sort of notion to catch of itself popular favour, but to devise remedies for the evils which are found to follow the applications of this popular notion.

The school examinations in view of *payment by results* are, as I have said, a

game of mechanical contrivance in which the teachers will and must more and more learn how to beat us. It is found possible, by ingenious preparation, to get children through the Revised Code examination in reading, writing, and ciphering, without their really knowing how to read, write, and cipher.

To take the commonest instance: a book is selected at the beginning of the year for the children of a certain standard; all the year the children read this book over and over again, and no other. When the Inspector comes they are presented to read in this book; they can read their sentence or two fluently enough, but they cannot read any other book fluently. Yet the letter of the law is satisfied, and the more we undertake to lay down to the very letter the requirements which shall be satisfied in order to earn grants, the more do managers and teachers conceive themselves to have the right to hold us to this letter. Suppose the inspector were to produce another book out of his pocket, and to refuse grants for all the children who could not read fluently from it. The managers and teacher would appeal to the Code, which says that the scholar shall be required to read "a paragraph from a reading book used in the school", and would the Department sustain an Inspector in enforcing such an additional test as that which has been mentioned?

The circle of the children's reading has thus been narrowed and impoverished all the year for the sake of a *result* at the end of it, and the *result* is an illusion.

The reading test affords the greatest facilities for baffling those who imposed it, and therefore in reading we find fewest failures, but the writing test is managed almost as easily. Let us take the middle of a school, generally the weakest part, and the part which requires most careful teaching—the scholars in the third standard. There are books of the third standard which, what with verse, pages of words for spelling, exercise for dictation, and sums, contain for the prose reading lesson less than fifty pages of good sized print. The writing test for scholars of the third standard is to write from dictation a sentence from the same lesson of their reading book in which they have just previously been set to read. Verse is not commonly used for the reading of the third standard; an examiner would hardly choose to set the very dictation exercises given in the lesson book; there remain the fifty prose pages which the scholar has been reading and re-reading all the year. His eye and memory have become familiar with them; he has just refreshed his acquaintance with one of them by reading it; from this page he is now set to write a sentence slowly dictated to him by a few words at a time. Can it be said that because a child can spell this sentence tolerably and thus produce the required result, he may therefore be set down as able to write easy sentences from dictation? and must we not own that this *result* also is in great measure an illusion? We see, accordingly, that though the rate of failure in writing does exceed that in reading, yet it exceeds it *very slightly*, and both are quite inconsiderable.

In arithmetic, the rate of failure is much more considerable. To teach children to bring right two sums out of three without really knowing arithmetic seems hard. Yet even here, what can be done to effect this (and it is not so very little) is done, and our examination in view of payment by results cannot but encourage its being done. The object being to ensure that on a given day a child shall be able to turn out, worked right, two out of three sums of a certain sort, he is taught the mechanical rule by which sums of this

sort are worked, and sedulously practised all the year round in working them; arithmetical principles he is not taught, or introduced into the science of arithmetic. The rate of failure in this branch also will thus, in all probability, be gradually reduced, but, meanwhile, the most notable result attained will be that which has been happily described by my colleague, Mr Alderson, when he says: "Unless a vigorous effort is made to infuse more intelligence into its teaching, *Government arithmetic* will soon be known as a modification of the science peculiar to inspected schools, and remarkable chiefly for its meagreness and sterility."...

The Minute of February 20th, 1867, was meant to correct that impoverishment of the instruction, which was due to the mechanical routine brought in by the Revised Code examination.

But it proceeds just in the same course as that examination proceeds. It attempts to lay down, to the very letter, the requirements which shall be satisfied in order to earn grants. The teacher, in consequence, is led to think, not about teaching his subject, but about managing to hit these requirements. He limits his subject as much as he can, and within these limits tries to cram his pupils with details enough to enable him to say, when they produce them, that they have fulfilled the Departmental requirements, and fairly earned their grant. The ridiculous results obtained by teaching geography, for instance, under these conditions, may be imagined. A child who has never heard of Paris or Edinburgh, will tell you the measurements of England in length and breadth, and square mileages, till his tongue is tired. I have known a class, presented in English history, to take the period from Caesar's landing to the Norman Conquest, and to be acquainted in much detail with the Roman invasion of Anglesey; but Carnarvon, on the coast opposite Anglesey, being mentioned, they neither knew what Prince of Wales was born there, nor to whom the title Prince of Wales belonged.

Is it not therefore clear that Lowe was proved wrong? He had assumed that educational efficiency could be obtained cheaply. What he achieved cheaply was rote learning.

However, after being tried for more than thirty years it was dropped. Centrally prescribed syllabuses and the annual examination were abandoned. And in 1902 when School Boards were abolished and education was handed over to County Councils, County Boroughs and the larger non-county Boroughs and Urban Districts the responsibility for curriculum was handed to them. It may be that being new to educational administration, inheriting widely differing administrative patterns which had to be unified, and in the case of **Counties and County Boroughs** being concerned about developing **Grammar Schools** as their new powers allowed, all combined to give **curriculum control** a low priority. At all events, I can find no evidence of any deliberate decision by **Governments or Local Authorities** to hand the responsibility for curriculum over to schools and teachers. But somehow or other it happened.

And so in this country teachers have more freedom within the classroom than teachers anywhere else. This is not always appreciated as it should be. When Sir David Eccles was Minister of Education, he suggested the establishment of a Curriculum Development Group within the Ministry. This was regarded as a threat to the freedom of schools and teachers, and was successfully resisted by both organised teachers and Authorities. Later, under Sir Edward Boyle, the idea was superseded by a teacher-controlled Schools Council, which is now established. It is a remarkable and unique institution. It is financed by Local Authorities but its policy is controlled by teachers. No other country has trusted its teachers sufficiently to establish a similar institution. It is a fitting symbol of the professional progress made by teachers from the days of payment by results.

Thus one hundred years after the government took steps to provide elementary education for all, at least as many vital changes have taken place in the position of teachers as have taken place in the education system itself. Salaries have improved and are settled nationally. Superannuation has been instituted and improved. Tenure is secure. There is a right of appeal. Compulsory extraneous duties and "obnoxious interference" have almost disappeared. Payment by results has disappeared.

7. CONCLUSION

And what of the future? Salaries will continue to be a problem, for here there is no final solution. Superannuation contributions may one day disappear; the scheme may be modified and benefits may be improved. No improvements of any great importance in security of tenure seem possible, but the existing security must be defended. A General Teachers' Council may emerge, and teachers will continue to enjoy academic freedom so long as they act responsibly.

The last century has seen great advances. In the next, teachers must hold what they have firmly and continue to press forward towards the ideal of a united, highly paid, secure, free and responsible profession.

AN EXPLORATORY STUDY OF SCIENCE TEACHERS' PERCEPTIONS OF EFFECTIVE TEACHING*

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I. PREVIOUS RESEARCH

LITTLE or no objective study has been made of teachers' perceptions of effective teaching nor into the possibilities for employing these in the development of means for assessing teaching effectiveness, though ironically the perceptions of pupils and students have been and are being used for this purpose. The existing substantial body of research into teaching nowhere draws on the collective insights of practising teachers (Gage et al., 1963).

There is of course considerable anecdotal material giving personal accounts of what constitutes effective teaching. This material can be and has been used to construct paradigms of effective teaching but not without additional reference to more systematic studies (Lamm, 1969).

Currently research into teaching effectiveness is concentrating on the teacher's classroom behaviour, especially on the structure of teacher-pupil interactions (Adams and Biddle, 1970; Flanders, 1965; and Herbert, 1967) though the works of Jackson (1968) and Smith and Geoffrey (1968) suggests that other factors may be equally important in effective teaching, in particular the quality of the preparatory

* The research reported here is part of a larger research into the structure of science teaching supported by a grant from the Department of Education and Science.

planning undertaken by the teacher and his ability to employ complex management strategies in the control of pupils' learning.

It may also be that the teacher's perception of effective teaching is a factor influencing teaching effectiveness. There is after all sufficient evidence in the psychology of perception to suggest that it is a potent element in determining human behaviour. On the assumption that the teacher's perception of teaching may be related to effectiveness the research to be reported is based though only in part. It is also based on the need to throw further light on the nature of science teaching about which disquiet has been expressed in recent years (Dainton, 1968).

2. METHODOLOGY AND RESEARCH DESIGN

In any research one begins with a set of assumptions and, if its findings are not to be the victim of prejudice no matter how well intentioned, it is necessary to make them explicit. The assumptions for this research were based on a model or sub-theory of effective teaching as applied to the teaching of science. In developing the model note was taken of both the work of theorists in teaching and of researchers in science education. In particular attention was paid to the writings and studies of Komisar (1968), Strasser (1967), Brandwein (1950), Kerr (1963) and Suchman (1962).

The model which was developed employed three basic dimensions:

- A. the teacher's classroom behaviour and relationships;
- B. the teacher's preparatory behaviour including his relationships with his colleagues and with pupils in general outside the classroom and laboratory; and
- C. the standing conditions or requirements of teaching including the teacher's professional qualifications in his subject and in the study of education, and his desire to pursue these further.

Along each dimension sub-divisions were made descriptive of activities or attributes of effective teaching. For example, the sub-divisions of the first dimension (A), five in all, were organisation both in classroom and laboratory, teaching in the sense of the *act of teaching*, discipline and control, personal relationships and evaluation including style of and disposition toward testing, assessing and examining. The remaining two dimensions were sub-divided each into four to give a total of thirteen sub-divisions.

Concurrently with the development of the model to guide the research a number of science teachers were asked to engage in de-

veloping statements descriptive of effective science teaching. Some 300 statements were produced each of which related to one or other aspect of perceived effectiveness in science teaching. These statements were then culled for duplication, ambiguity and complexity, and the remainder, 106 final statements, allocated by three competent judges to the thirteen sub-divisions of the model. No statement was allocated unless there was substantial agreement. If such agreement was absent, the statement was either re-written or rejected. Where statements were re-written every effort was made to retain its original intention and the style of language used by science teachers (Lazarsfeld and Barton, 1955).

The following examples may provide the reader with some idea of the form and scope of the statements:

- (a) Relates new learning to natural phenomena within the experience of the pupil in order to develop meaningful associations.
- (b) Encourages pupils to set themselves goals according to their abilities.
- (c) Is consistently fair and emotionally calm when enforcing rules.
- (d) Helps pupils to develop an appreciation of the benefits and misuses of science.
- (e) Can help pupils differentiate between hypothesis, facts, superstition and theory as well as encourage pupils to suspend judgment when faced with inadequate scientific evidence.
- (f) Can evaluate text-books and laboratory manuals.
- (g) Organises displays and individual projects after school hours.
- (h) Changes curriculum and methods to keep up to date with developments in his subject and methods for teaching it.

The 106 statements were then placed in random order in a rating schedule: Questionnaire Rating Effective Science Teaching.* In rating the statements, science teachers were asked to rate them on a five-point scale for the extent to which they considered a statement was an attribute of an effective science teacher. Of 78 science teachers already involved in a larger research into the structure of science teaching, 58 completed the rating schedule. The teachers were about equally representative of the three sciences taught in secondary schools, were teaching pupils of average or above average ability, were teaching full-time and tended to be "young" teachers, that is with a mean teaching experience of seven years.

* Interested readers may obtain a copy of the Questionnaire on request from the Teaching Research Unit, School of Education, University of Birmingham.

3. STATISTICAL ANALYSIS

As a major concern of this study was to explore the structure of the perceptions of effective teaching held by science teachers as well as the possibilities for developing a scale for the assessment of effective science teaching, factor analysis was employed. It was considered a more useful tool for this purpose than statistical techniques based on the mean scores and standard deviations of the items, though *inter alia* a limited study of item means and standard deviations was possible.

Factor analysis based on the correlations between the 106 items rated by the teachers was undertaken at the second-order level because of the large number of first-order factors, 27 in all, and in order to minimise the risk of a halo or "general agreement" factor appearing (Thurstone, 1947). The analysis concentrated on the oblique solution on the assumption that the factors would reflect aspects of an integrated, and therefore correlated, set of perceptions by science teachers of what constitutes effective science teaching.

Nine factors were identified and it was decided that eight of these involved a sufficient number of items to provide reliable descriptions and scores. The items which were associated with the omitted factor were, therefore, redistributed on the basis of their secondary associations or loadings to other factors.

4. RESULTS

Although it is the main purpose of this paper to report the results of the factor analysis, it may not be without interest to note if only briefly some findings arising from a study of the mean scores and standard deviations of the items.

The magnitude of the standard deviations of the 106 items suggested that there was a reasonable degree of agreement among the teachers on the rating to be accorded to them. Mean scores for the items indicated that science teachers place greatest emphasis on the dimension of effective teaching concerned with the teacher's classroom behaviour and relationships, and least on the dimension concerned with the standing requirements of teaching. To judge only from those items among the 30% of all items rated highest, the ideal stereotype of an effective science teacher is one whose teaching is pupil-centred, goal-directed, informed by an understanding and an enthusiasm for science as a field of study, characterised by good-humoured discipline, concern for safety in the laboratory, and up-to-dateness in subject matter and with curriculum innovation.

This stereotype is by way of being a halo. It represents what science teaching might ideally be like. Beneath this halo other and probably more realistic perceptions operate and it is in the structure of the eight factors that these will be explored.

5. NAMING THE FACTORS

Each of the factors represents a style of effective science teaching as perceived by the sample of teachers. Each may be effective in a different way and under different conditions. On this some speculations will be offered later. The concept of style for purposes of this paper is to be understood in terms of the modality of perceived effective teaching, whether it focuses on subject matter, the pupil, on examinations and tests, on class control or on instrumental skills.

The description of each factor is limited to a few items in each case but these are the items with the highest loadings and serve to define the factor in question. The loadings are given in brackets where appropriate.

Factor 1: Face-to-face science teaching (pupil-centred/teaching-focused)

This factor picked up the major variance in 20 of the 106 items. Of these items those which most completely defined the factor were:

Is constructive and helpful in his criticism of pupils (.874).

Tries to stimulate pupils to think for themselves about science (.667).

Teaches for understanding rather than reproduction of learned material (.589).

Is clear and unequivocal in his personal relationships with pupils (.552).

In addition to these items were others with loadings of .500 or higher and together the items suggested a perception of effective teaching which conceives the classroom as the centre of a common endeavour. This style of teaching showed "personal respect for each pupil as an individual", a recognition "that outside school environment influences pupils", a concern "to build up work from known interests of the pupils" and a sense of purpose in that there was significant loading on the item which showed concern to "work towards a planned objective or objectives in each lesson" in a flexible way.

However, the interests of pupils are not paramount nor are experimental work, field trips and the use of laboratories. In fact items concerning these last are negatively loaded on this factor. In short there

is a marked pupil-centredness and a verbal character to the style of effective teaching defined by this factor, and it is through the teachers talk and in discussion with pupils that the understanding (rather than the facts) of science are introduced.

Factor 2 : Face-to-science science teaching (pupil-centred/science-focused)

Twenty-four items give the major component of their variance to this factor. Items most closely defining this factor were:

Relates new learning to natural phenomena within the experience of the pupil in order to develop meaningful associations (.688).

(The teacher) has a genuine interest in science and believes in the academic and practical use of the subject (.634).

Can help pupils differentiate between hypothesis, facts, superstition and theory as well as encourage pupils to suspend judgment when faced with inadequate scientific evidence (.606).

Makes tests that require known principles to be applied to new situations (.601).

In addition were items concerned with the teacher's knowledge of "appropriate recent research", the philosophy of science, the limitations of science and its economic and technological value.

Despite the clear and central concern with all things scientific including a way of teaching which links "teaching material to laboratory practical work" and a concern to show pupils "how to establish experimental controls", there is lacking "a genuine interest in the teaching profession". In fact this item had a negative loading of -.405.

In sum this style of effective teaching is marked by a preoccupation with science as a subject and its purpose seems to be to encourage pupils to face science. Only in making available to pupils a knowledge of science and its methodologies is it pupil-centred and nowhere does it introduce the more personal aspects of teaching.

Whereas the previous style (Factor 1) is indicative of the Socratic teaching of academic pupils, this style suggests the Socratic teaching of academic science. It is a factor clearly distinguishable from Factor 1 in that it picked up from the ninth and insubstantial factor "teaches pupils how to classify and summarise data" but not "has a sense of humour" which was collected by Factor 1.

Factor 3 : Impersonal, evaluative (pens out, facts down) science teaching

Of the 18 items which were involved in the factor the following define it most closely:

Can interpret the results of diagnostic instruments used in schools (IQ, aptitude and achievement tests) (.688).

Is skilful in the use of apparatus in the school laboratory (.662).

Has useful information in subjects other than, but related to, his academic subject ((.641).

Uses various methods of evaluating pupils (.613).

Knows how to proceed if there is a serious problem of discipline (.501).

Other items with substantial loadings concerned high academic qualifications recognised in science, educational qualifications and "is concerned to have papers or articles published", on the one hand, and on the other "plans the direction of his teaching with examinations . . . always in mind" and "his pupils have a good record of success in external examinations".

The style of teaching defined by this factor appears to be an amalgam of two complementary but yet discrete dimensions. Teaching by a very knowledgeable, highly qualified teacher who possesses a considerable depth of information, little or none of it about his pupils, represents one dimension and an entirely evaluative approach to pupils representing the other. In a sense these two dimensions are the opposite sides of the same coin: a style of teaching created by the successful product of the examination system who espouses the values of that system and transacts them in his teaching.

Factor 4: Pupil-autonomy science teaching

Sixteen items loaded significantly on this factor. Those which most clearly define it are:

Can evaluate benefits derived from field trips or visits to industry

(.720).

Encourage pupils to set themselves goals according to their ability

(.656).

Gives pupils some responsibility for the care of laboratory equipment and materials (.652).

Can devise experiments which involve pupil participation in learning (.608).

Encourages pupils' self-initiated work (.624).

As with Factor 1, "Face-to-face science teaching", the items on this factor show a consideration for the well-being of pupils. It is, however, concerned more with the pupil's autonomy in the learning situation than with the pupil as an individual. This is brought out clearly in other items which loaded on this factor. These concerned

the teacher's encouragement to pupils to write their own notes and his readiness to explain "why subject matter is important to pupils".

A further subsidiary aspect of this factor was the teacher's view of himself. He was ready to take "refresher courses in teaching and general educational matters" on the basis of realising "personal limitations in his knowledge and teaching techniques".

The major qualities of this teaching style are an emphasis on the pupils taking responsibility for his own learning and a lack of confidence by the teacher in his own knowledge of both subject matter and teaching methods. This last point is supported by the fact that the item "holds a recognised qualification in science" was negatively loaded on this factor.

Factor 5: Classroom management, science teaching

Ten items were involved in this factor. The four main ones were:
Is confident and at ease when teaching (.711).
Is consistently fair and emotionally calm when enforcing rules (.697).

Assesses the work of pupils regularly (.638).
Uses laboratory equipment to show pupils how to verify facts and principles (.515).

In this teaching style the teacher "checks the classroom or laboratory environment for proper lighting . . . and safety" so that "accidents . . . or incidents requiring disciplinary measures seldom arise" and "provides alternative occupations for pupils who have finished . . .".

The major characteristic of this style of teaching is its "management" focus. It concentrates on managing both the learning environment and the pupil in it. It is firm, clear, instrumentally competent and fair. It is also concerned in a limited way to teach some science.

Factor 6: Competent science teaching

Only six items were associated with this factor. The three most important were:

Is a competent performer of any skill which is needed in teaching (.681).

Willingly consults colleagues in case of professional difficulties (.596).

Can apply his knowledge of the psychology of learning to the teaching of his subject (.418).

The effective teacher in this style of teaching "uses audio-visual materials in his teaching", is patient "in his dealing with pupils" and

"changes curriculum and method to keep up to date . . .". But it is noteworthy that not one item concerned with science is associated with this factor.

Put briefly this style of teaching is characterised by a marked emphasis on the performance of teaching and is pupil- not subject-centred.

Factor 7: Laboratory-assistant or production-line science teaching

Five items only were found associated with this factor. The three with the largest loadings were:

Takes refresher courses in his science subject (.755).

Uses pupils to carry out routine duties such as giving out books, cleaning the blackboard etc. (.560).

Frequently revises earlier work (.504).

The remaining items concerned inviting pupils "to help in practical demonstrations" and affecting them "so that they wish to take more advanced courses in science".

Science is important in this style of teaching as is the concern to dispose pupils so that they will go further in its study but so also is a routine and repetitive approach. It has a concern with pupils but they are less central than subject matter.

Factor 8: Science subject matter teaching

This factor proved to be rather weak but because of its potential interest and importance it is reported in full together with some additional items which load on it though none strongly. The first four items serve to define its characteristics and the remaining three give a little body:

Helps pupils to prepare for a career in science and technology (.521).

Can evaluate text-books and laboratory manuals (.448).

Develops interest in science in his pupils (.438).

Has studied the philosophy and psychology of education (-.400).

Is willing to change an opinion or conclusion because of later evidence (-.502).

Has a genuine interest in science and believes in the academic and practical use of the subject (.315).

Has personal respect for each pupil as an individual (-.380).

Has useful information in subjects other than, but related to, his teaching subject (-.359).

This factor appears to define a style of science teaching in which the teacher is a narrow specialist, antipathetic to educational psychology and philosophy, lacking in concern for pupils as individuals and yet strongly concerned that they prepare for a career in science, valuing science as a field of study though unwilling to change his perceptions of it on the basis of evidence, and well able to assess the value of text-books for his teaching.

These then are the eight factors isolated as perceived characteristics or styles of effective science teaching. The intercorrelations between them are reported in Table I. From these it can be seen that each

TABLE I
INTERCORRELATIONS BETWEEN THE FACTORS

Factors	1	2	3	4	5	6	7	8
1. Face-to-face science teaching		.488	.208	.353	.291	.309	.321	-.019
2. Face-to-science science teaching			.286	.335	.275	.168	.242	.018
3. Impersonal, evaluative science teaching				.286	.327	.099	.188	.133
4. Pupil-autonomy science teaching					.037	.169	.380	-.122
5. Classroom-management science teaching						.061	.054	.163
6. Competent science teaching							.089	-.103
7. Laboratory-assistant science teaching								.089
8. Science subject matter teaching								

factor is reasonably independent of others. Where there is a degree of dependence, as there is, for example, in the first five styles of perceived effective science teaching, it is to be expected on the basis of a shared characteristic. These five share a degree of pupil-centredness though differing markedly in other respects. Factor 7 "Laboratory-assistant science teaching", can be seen from the intercorrelations of Table I also to share something with the first five factors and inspection of additional items loading on it suggest that this factor or style also exhibits a degree of pupil centredness.

Table II shows the mean and standard deviation of the average agreement of the sample of science teachers with the items going to make up each factor. There is a fairly steady progression from the strongest support for a pupil orientated style of teaching to the weakest support for the subject centred style, with Factor 7 now having a ranking in accord with its assumed pupil centredness.

The interesting divergence in the ordering concerns the two factors or styles of teaching where competence is a central feature, Factors 5 and 6. These are rated more highly than Factor 4, "pupil-autonomy science teaching", which in fact included five items of the sixteen which defined it, mentioning science either directly or by implication. This divergence in the ordering seems to suggest that the

science teachers in the sample have a preference for styles of effective science teaching which emphasise the importance of the pupil *per se* even to the extent of preferring a style, "Classroom-management

TABLE II
AVERAGE OF RATINGS BY SCIENCE TEACHERS
OF ITEMS OF EACH OF EIGHT FACTORS

<i>Factors</i>	<i>Mean</i>	<i>S.D.</i>	<i>Rank order</i>
1. Face-to-face science teaching	4.02	.226	1
2. Face-to-science science teaching	3.86	.369	2
3. Impersonal, evaluative science teaching	3.20	.584	7
4. Pupil-autonomy science teaching	3.57	.563	5
5. Classroom-management science teaching	3.76	.236	4
6. Competent science teaching	3.79	.374	3
7. Laboratory-assistant science teaching	3.33	.647	6
8. Science subject matter teaching	2.71	.505	8

science teaching", which appears to be composed of no more than managerial skills of a low order, to other teaching styles which attempt to deal with the subject matter of science.

6. DISCUSSION

The first five styles of perceived science teaching all involve some method or other of coping with the interpersonal aspects of the classroom. The remaining three, which attracted substantially fewer items, are concerned rather more closely with the teacher himself. Seven of the styles (1, 2, 3, 4, 5, 6 and 7) show some degree of pupil-centredness and all but one, "Competent science teaching", some degree of concern to teach science. No single style, however, exhibits that subtle balance between the nature of subject matter, teacher behaviour and pupil involvement generally considered necessary for effective teaching; but this is to say no more than that the ideal and the actual are seldom if ever to be found in intimate partnership and certainly not in this exploratory study.

What can be claimed is that most if not all of the styles described can be identified as the predominant style of known science teachers, and that science teachers are able to identify occasions on which they have themselves employed one or more of the styles identified. What cannot be demonstrated, or even asserted is the nature of pupil achievement in science likely to arise from each of the styles of teaching, though some speculation is possible.

For example, the perceived style of effective science teaching

described as "Science subject matter teaching", in which the teacher appears unwilling to change his opinions, is didactic in the pejorative sense, is antipathetic to educational philosophy and psychology, especially to those aspects of it which suggest that respect for one's pupils as individuals is an important attribute of teaching (Fleming, 1958; Peters, 1966). It is nonetheless concerned to develop an interest in science in the pupils, set them on the road to a career in science. The teacher in this style has himself a genuine interest in science is likely to present pupils with a view of science which is exact, beyond doubt, self-contained and unrelated to human values; and so give rise to a highly convergent style of achievement of the kind described by Hudson (1966) which may, when allied to the encouragement to pursue a career in science, lead to academic success in science.

Similarly the "Laboratory-assistant science teaching" style which is characterised by the repetition by the pupil of received skills and the encouragement to follow a career in science may lead to pupil achievement in the effective performance of routine scientific tasks and the rigid acceptance of scientific ideas as well as an interest in certain kinds of scientific work. Both Whitehead (1932) and Jevons (1969) have described this form of achievement.

Contrariwise, the "Face-to-face science teaching" style seems unlikely to motivate pupils to take up science as a career though it may produce considerable achievement in the understanding of scientific concepts though not in understanding science as a system of thought having human and technological implications.

As for "Impersonal, evaluative science teaching", pupil achievement is likely to reside in the effective acquisition of factual knowledge for the sole purpose of passing examinations—and, no doubt, with a fair degree of academic success.

The four styles (1, 2, 6 and 5) most valued by the science teachers in the sample are likely to make some contribution to pupil achievement in one or other aspect of science, its factual and conceptual basis or its techniques and methods, but none seems to promise more than to make pupils aware of the existence of science in their culture and so play a part in their general acculturation. They certainly do not promise to fit the pupil to grapple creatively with scientific ideas which is deemed by some to constitute a central feature of an education in science (Lamm, 1969; Elkana, 1970).

Before such speculations as these can be verified within the framework of a well designed research it will be necessary first to refine the "Perception of Effective Science Teaching Scale" by trying

out additional items so that those styles defined by few items would emerge more clearly, and second to identify, using the Scale, a sufficient sample of science teachers employing each of the eight styles to make valid generalisations permissible.

When the 45 items which presently seem to be working have been supplemented, it is intended that studies of this kind should be undertaken. Meantime some reflection on the findings of this exploratory and preliminary study might well illuminate current problems in science teaching and in the training of science teachers.

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THE MEANINGS OF CONVERGENCE AND DIVERGENCE, WITH DATA FROM GIRLS' SECONDARY SCHOOLS

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ABSTRACT

Previous work on the possibility of separating the constructs of convergence and divergence is discussed. It is held that if the two are indeed separate dimensionally, then any analysis which implies a continuum of "convergence-divergence", even if it deals with two separate "tops and tails" sub-groups, must be mistaken. Using a fluency test for divergence, and a new convergence test, this research finds among secondary schoolgirls that the two abilities are significantly correlated. However, these abilities are each related in different ways to a broad set of other personal attributes, which include ratings on Fitting in to the School Society, Making the Best of Academic Opportunities, a self-rating of satisfaction in school, and preferences to excel in different fields of endeavour. Cultural factors which pertain to the milieu of each school also relate to norms of abilities in each school and to performance and satisfaction as well as to preference ratings. Conclusions drawn from research based in one or a few schools only should therefore be interpreted with care.

I. INTRODUCTION

IN an engaging book Hudson (1966) has imported the study of the nature of superior ability from America to Britain. Implicit in his and in related work is the idea expressed by McNemar (1964) that below a certain level of intelligence people are not very likely to have any creative potential; above a certain level, people might or might not show creativity and this might be discernible by some test. Hudson uses Getzels and Jackson's (1962) strategy of studying convergence and divergence, and abuses (probably correctly according to the findings of this paper) their treatment of divergence and creativity as being similar.

Hudson himself is careful not to fall into one trap which has caught others. "Convergers" and "divergers" (as he defines them)

are likely to be creative in different ways, convergers in science and divergers in arts. He proceeds to show how a constellation of personality as well as ability characteristics is likely to be true of either extreme type of person.

Other writers more easily take the position that divergence implies creativity, with convergence by implication not equally related. Eysenck (1967), writing of Hudson's work, says, "In studies of this kind, candidates good on divergent tests are often called 'creative' and the argument is sometimes extended to other desirable qualities of intellect such as originality." Thus although not avowing this view himself, it becomes passed on. Lovell and Shields (1967) refer to the use of five "Divergent Thinking (Creativity) Tests . . .". Wallach and Kogan (1965) in an extensive book make the same identification of divergent ability with creativity, without examining any real index of creativity.

Writers who explain research in this field to the wider public have tended to accept that creativity is distinguishable from other types of ability, and may be measured by tests of divergence. Shields (1968) in a booklet published by an authoritative body recognises (p. 16) that "there has been criticism of the use of the terms 'creativity' and 'divergent thinking' as if they were synonymous"; however, we later read (p. 46) that "tests constructed to measure . . . [divergent] . . . abilities would therefore be measuring . . . creative thinking abilities". Finally, the popular press does much to spread this notion; thus in a series designed to "help readers pick their way through the minefield" (of educational concepts) the Advisory Centre for Education (1970) writes that "convergers tend to choose science . . . [divergent tests] encourage you to diverge and roam creatively . . ."; it contrasts the ideas that "we have recently tended to reward conformist thinking as against creative and emotionally involved thinking", and says that "the implications are enormous".

If the implications are enormous, and this is probably true, it would be desirable to clarify what is meant by convergence and divergence; whether these abilities are related or independent; and how they may relate to "creativity".

Getzels and Jackson (op. cit.) were at pains to show that IQ (convergence) and creativity (divergence, in their usage) were independent; curiously enough, they nevertheless (and Hudson follows this) appear to conceive of a "convergency-divergency *dimension*" (my italics). The question therefore arises as to whether "creativity" (or divergence) and IQ (convergence) are to be treated as two inde-

pendent constructs, or as different poles of a single "dimension". Wallach and Kogan (op. cit.) asserted that divergence tests should be given in a playful situation and that then convergence and divergence are separable constructs. Lovell and Shields (op. cit.) on the other hand found that divergence itself is not accountable for by one dimension; and when taken together with convergence tests "a great part of the identified variance of these tests is accounted for by a central intellectual component . . .". Wallach and Kogan might contend that this evidence is irrelevant to their case as the divergence tests were not presented in a play situation (though it is not clear what analogue of the play situation would be appropriate for older students). However, Ward (1967) reanalysed Wallach and Kogan's own data and found that "the multifactorial nature of 'creativity' data is once more demonstrated" and though divergence correlates with attainment on convergence tests, it has some measure of separate existence. In a separate examination of the same data Fee (1967) tends to support Wallach and Kogan's view that the creativity dimension is *relatively* (my italics) independent of General Ability.

Elsewhere, Ginsburg and Whittemore (1968) used a word association test to measure divergent ability among 292 students in Nevada, and after analysing similar data from Australia consider that divergence was "positively and linearly related to verbal intelligence measures . . .". However, in two later studies Joyce and Hudson (1968) and Dacey, Madaus and Allen (1969) both found (without Wallach and Kogan's resource to play-testing) that measures of divergence were separable by factor analytic methods from measures derived from orthodox IQ tests.

The evidence thus seems to be equivocal; that though there can be something shown to be distinctive about divergence, it can nevertheless be related in other studies to other kinds of ability. Hudson (1968, p. 102) himself shows that inter-correlations between divergence tests are sometimes lower than between each divergence test and IQ. It is important therefore to understand what is happening when convergence and divergence are treated by Hudson as opposite poles of a single "dimension" (he points out (1966, p. 42) that his dimension is one of "bias" between two abilities; however he also treats his dimension ambiguously as an ability-continuum itself).

2. METHODOLOGY

This paper is not principally about individuals, but is about traits, characteristics or constructs. It will follow Hudson's practice in ex-

position by not describing what was an exploration equipped with certain recording devices into an incompletely known area as though it was a series of neatly set up experiments answering hypotheses, but as a mapping exercise in the fields of abilities and of social interests and interaction.

Two tests were used (see below) one to tap divergence, the other convergence. Before any assumptions about correlation or independence of these constructs are made, a possible outcome (in terms of generating a typology) of giving two such tests may be considered.

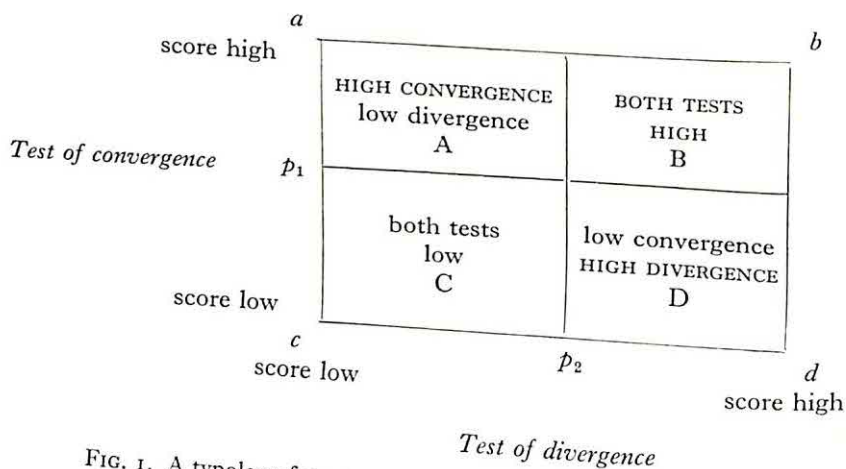


FIG. 1. A typology from tests of convergence and divergence

Cut-off points are chosen (p_1, p_2) so that they define high and low divergent scorers, and high and low convergent scorers. Those in cell A are high on convergence; this is equally true for those in cell B. Now we may see how Hudson defines his types of "the converger" and "the diverger". His measure of what characterises a "diverger" (1966, p. 39) in fact diverges from his measure of divergence alone, because it incorporates the proviso that the subject also shows a low convergence score. Thus his divergent type corresponds with occupants of cell D, and his convergent type accords with cell A.

Contemplating the rectangle $abcd$, if one orients one's attention along the diagonal ad then it is possible to see, as Hudson does, a "dimension" of convergence-divergence. In between these poles, around a line $b-c$ lie those whom Hudson (1966, p. 39) terms "the all-rounders, the boys who are more or less equally good (or bad) on both types of test". Hudson is aware of how his definition of divergers (as people) differs from his definition of the possession of high diver-

gence. He writes (1966, p. 42, in a footnote) that he has tried out a " 3×3 system which accounts for both bias and level"; he also says (1966, p. 135), "There may be . . . paragons of psychological health, who score A's on intelligence and open-ended tests alike . . . revealingly (!), psychology has little to say about such monsters of psychic efficiency." Further, we read of his research design that it "neglects the all-rounder, the boy in the middle . . ."; and we are shown, by the point of Hudson's own petard (on which he seeks to hoist the legion of presumably convergent-minded mental testers) that "the central failing amongst mental testers has been the neglect of inconvenient evidence".

Now by the use of a simple system of categorisation such as that suggested in Fig. 1 (and also used by Wallach and Kogan, *op. cit.*), "paragons of psychological health" may indeed be studied. They are the occupants of cell B. In this study a rotation has been exercised therefore, not on a correlation matrix, but upon the way in which divergers and convergers are defined compared with what was Hudson's view. Thus "divergers" are those in cells B and D; "convergers" are in cells A and B. The point of paying attention to cell B is most important. Hudson (1966, p. 44) exemplifies a "convergent" scientist (i.e. a cell A occupant) as "one of the central nervous systems upon which the future of British science depends"; science will certainly call upon these cell A recruits; but it may also benefit—probably much more so in its research functions—from those in cell B, whom Hudson simply does not consider.

When we realise the existence of cell B individuals we can resolve a dilemma that results from Hudson's typology, and which he makes explicit (1966, p. 110) when he refers to the findings of Roe (1953) and McKinnon (1962) and says that "these two remarkable pieces of research conflict. . . . Roe reports that eminent research workers in physical science strongly resemble the converger; McKinnon that creative men and women in all fields are more divergent than their colleagues." To Hudson a contradiction exists because he defines his categories of converger and diverger as exclusive (cells A and D). According to McKinnon, even creative scientists are more divergent than non-creative ones; whereas by Hudson's definition of convergence, scientists should be convergent (as Roe finds) and therefore (by his definition) they should not be divergent as well. McKinnon's creative scientists may more likely be of type B, high on convergence (like Roe finds) and also high on divergence. No dilemma need therefore exist.

sixth forms. Results from three schools in which the sampling did not fit this broad plan were in fact collected, but have not been included in the analysis here. The testing was done in the context of a wider sociological study, which accounts for the short time allowed for psychological testing.

5. RESULTS

On convergence the middle group of girls does not score significantly higher than the youngest group ($t = 1.58$, for $df = 350$, $p > 0.1$); the eldest group has a higher mean than the middle that is only slightly more statistically distinct ($t = 1.87$, for $df = 495$, $p < 0.1$). On divergence, the middle group has a very similar mean score to that of the youngest group ($t = 0.05$, for $df = 350$, N.S.); but the oldest group is clearly at an advantage over the middle ($t = 2.08$, for $df = 495$, $p < 0.05$).

TABLE I

MEAN SCORES ON TWO TESTS FOR GIRLS AT DIFFERENT AGES				
<i>Test scores for :</i>		<i>Ages</i>		
(Standard deviations in brackets)		12-14	15	16-18
Convergence		6.30 (2.54)	7.64 (2.64)	8.74 (1.45)
Divergence		14.42 (7.01)	14.75 (5.27)	17.42 (3.72)
No. of girls		166	185	312

This all suggests that the sixth-form girls (aged 16+) are a select population, not very clearly in terms of convergence, but probably in terms of divergence. On grounds of maturation the oldest girls would be expected to score better; however, there would more likely tend to be a tailing off of improvement with age, instead of as is found, an accelerated rise in recorded ability. The effect of educational organisation of girls into forms by ability rather than by age alone is shown by the greater correlations which exist between form and ability than between age and ability (for age \times convergence, $r = 0.19$; for form \times convergence, $r = 0.25$; for age \times divergence, $r = 0.22$; but for form \times divergence, $r = 0.31$; in all cases $N = 833$, $p < 0.05$).

The distribution of convergence and divergence together finds more girls of all ages with scores in cells B and C (195, and 190) than in cells A and D (137 and 141). This shows that a typology which focuses chiefly on cells A and D cannot be adequate. It suggests that results on the two tests are correlated, and this is in fact so ($r = 0.32$, $N = 833$, so $p < 0.01$). On the present evidence then it does not

seem likely that divergence and convergence are cleanly separable constructs.

The question now arises, how do people in the various cells differ, if at all? Evidence has been collected on three types of data. First, girls were rated by headmistresses on two characteristics: Fitting in to the School Society, and Making the Best of Academic Opportunities. For each characteristic, five-point scales were devised; each point was given a verbal label, but the scales were discussed with each rater to inculcate the idea of a general concept. "Fitting in" ranged from "is a really difficult member of the school" to "a really useful member of the school"; "academic gain" ranged from "has neglected every opportunity to develop her academic abilities and performance" to "has made the very best possible use of the teaching and academic facilities . . .".

The second type of data concerns aspirations to excel in different fields of enterprise. Girls were asked to choose which out of five alternatives (art, music or drama; work; games; becoming a prefect; and being good at domestic science) they would best like to excel in. In many girls' schools "science" is of limited prominence in the curriculum. Compared to academically oriented schools of the type Hudson studied, physics and chemistry were often weakly organised as a focus for a sub-culture. Therefore the category of "arts" specifies something that need not offer fulfilment through examined subjects; while "work" stood for examined subjects. Those who chose this item would tend to exclude the whole-hearted artistic types, but could equally well refer to historians and mathematicians as well as scientists.

The third type of data concerns satisfaction in school. Girls simply marked on a three-point scale whether they enjoyed being in school: "on the whole, yes / mixed feelings / or, on the whole, not so much".

Scores on all these items can be calculated and shown as means, though the tests of significance are by chi squared generally with the categories collapsed for simplicity in manual calculation. The results on headmistresses' ratings will be considered first.

Among the youngest girls alone, chi sq across all four types = 3.95, which for $df = 6$ does not reach even the 0.5 level of significance. For the senior girls likewise, chi sq = 4.54, which is not significant. For the middle girls chi sq = 14.22, which for $df = 6$ has a significance level of 0.05. Inspection of the cells shows that this is due to the double-poor scorers in cell C. If we followed Hudson's theories

we might expect to find that girls of type A, socially compliant, would achieve better ratings than those of type D. This was not found to be the case ($\chi^2 = 1.51$, N.S.). If we hypothesise according to the findings of McKinnon we would expect girls in category B to be rated

TABLE II

DISTRIBUTION OF RATINGS ON "MAKING THE BEST OF ACADEMIC OPPORTUNITIES", FOR GIRLS AT DIFFERENT AGES

(score 1 = best, . . . 5 = worst)									
Cell:	A		D		B		C		Total N
Type of girl:	"Hudson" converger		"Hudson" diverger		Both tests high		Both tests low		
Scores:	1, 2	3-5	1, 2	3-5	1, 2	3-5	1, 2	3-5	
Ages:									
12-14	30	9	25	6	38	16	29	13	166
15	27	10	35	11	41	9	30	21	184
16-18	46	15	54	10	77	14	76	21	313
Totals:	103	34	114	27	156	39	135	55	663

better than those in C. This is substantially confirmed ($\chi^2 = 11.64$, for $df = 1$, $p < 0.001$). Further, if we examine this possibility for girls aged 15 alone, we find that $\chi^2 = 6.51$ (for $df = 1$, $p < 0.02$). Age 15 is the time when the least intelligent use of their opportunities is being made by girls; this deficit is traceable to girls who show simultaneously both low convergence and divergence.

It could possibly be held that the above criterion is one of "creativity"; for this describes a difference between those who are thought to be making a fruitful use of the opportunities confronting them, and those who are not. As the results show, for girls, it is not "convergers" or "divergers" as defined by Hudson who appear to be more, or less "creative". It is chiefly a difference that can be located between those who show both attributes in a high, or in a low degree. The accent too, is not on those who appear to Heads as being *more*, but on those who appear to be *less* usefully occupied.

The two tests, of convergence and divergence can be separately examined for their relation to this rating. Comparing high convergers with low convergers (and disregarding divergence) gives a value of $\chi^2 = 0.41$, which shows that this test does not discriminate at all. Comparing high divergers with low divergers gives $\chi^2 = 8.40$ ($df = 1$, $p < 0.01$) which shows that the more fluent girls are thought to be making better use of their time. Divergence simply measured is thus associated with this criterion of "creativity", though

it must be remembered that discrimination is improved when both tests are examined together.

Again on a hypothesis consonant with Hudson's typology, we would expect to find girls of type A fitting in better socially. Inspection shows this is not likely to be true. In fact, although the 15-year-olds do not concur in this trend there is some sign that those who

TABLE III

DISTRIBUTION OF RATINGS ON "FITTING IN TO THE SCHOOL SOCIETY" FOR GIRLS AT DIFFERENT AGES

		(score 1 = best, . . . 5 = worst)							
Cell:		A		D		B		C	
Type of girl:	"Hudson"	converger		diverger		Both tests high		Both tests low	
Scores:		1, 2	3-5	1, 2	3-5	1, 2	3-5	1, 2	3-5
Ages:									
12-14		16	23	22	9	37	17	18	24
15		17	20	22	24	32	18	24	27
16-18		38	23	47	17	62	29	61	36
Totals:		71	66	91	40	131	64	103	87

Hudson sees as "divergers" (type D here) are actually rated as fitting in better with the community ($\chi^2 = 3.86$, for $df = 1$, $p < 0.05$). This runs counter to Hudson's evidence (1968, p. 14) that "convergers" tend to be more conscientious with "divergers" being more rebellious. On the other hand if we compare girls of type B who are good at both tests, with those who are poor at both tests we find that $\chi^2 = 6.78$ (for $df = 1$, $p < 0.01$); this shows a much more distinct difference in favour of those who are good on both tests over those who are poor at both, than exists when we make a Hudson-type comparison.

Taking the three age sub-groups one at a time, for the oldest a comparison of all four types of girl yields a χ^2 of 4.56 (for $df = 6$, N.S.). This reveals the seniors as a select group among whom differences of convergence or divergence do not systematically indicate better or worse social or academic performance. Among the 15-year-olds, $\chi^2 = 14.23$ (for $df = 6$, $p < 0.05$); here the difference is again stronger between the B and C types than between those whom Hudson labels convergers and divergers. The youngest girls also yield $\chi^2 = 12.62$ (for $df = 6$, $p < 0.05$) which indicates that significant differences exist between groups. Here it is clearly those with high divergence (categories D and B) who are seen as fitting in

better socially; in fact comparing D and B against A and C, $\chi^2 = 11.4$ (for $df = 1$, $p < 0.001$). Using levels of convergence alone, that is when comparing A and B against D and C we see that $\chi^2 = 0.34$, which is not significant.

Concluding this section on headmistresses' ratings criteria, we see that the divergence test by itself is in both cases associated with better performance. Comparison between groups defined in Hudson's manner as convergent and divergent shows a significant difference with regard to fitting in socially (in the opposite direction to Hudson's theory), but not with regard to a creative use of academic facilities. On the other hand, where girls high on both tests are compared with those low on both, there are strong differences in favour of those with higher abilities. Poor behaviour is relatively increased among the 15-year-olds of low overall ability. The senior girls are clearly a select group, and among this age stratum no differences in behaviour based on test types can be detected.

We come now to examine preferential aspirations to excel in different ways. Of the five fields presented, very little choice was made as regards games, or wanting to become a prefect, so results on these will be omitted for brevity. First we may examine preferences regarding the arts.

TABLE IV

DISTRIBUTION OF PREFERENCES TO EXCEL AT ART, MUSIC OR DRAMA,
FOR GIRLS AT DIFFERENT AGES

(some preference: score 3, 2; no preference, score 1)

Age:	A		D		B		C	
Type of girl:	"Hudson" converger		"Hudson" diverger		Both tests high		Both tests low	
Scores:	3, 2	1	3, 2	1	3, 2	1	3, 2	1
Ages: 12-14	18	21	17	14	29	25	17	25
15	19	18	25	21	28	22	25	26
16-18	33	28	44	20	59	32	57	40
Totals:	70	67	86	55	116	79	99	91

Inspection suggests that preference for arts might concur with high divergence. χ^2 comparing type A against type D is 2.77, which fails to reach significance at the 0.05 level. Likewise, comparing types B and C gives $\chi^2 = 2.12$. The difference is marginally greater in Hudson's type of definition; however, if we consider high divergence without regard to convergence we find that $\chi^2 = 4.78$, which for $df = 1$ is significant at the 0.05 level. On the other hand,

scores on convergence by themselves are not related to artistic preference, as in comparing types A and B against C and D, we get $\chi^2 = 0.01$, showing that girls of high or low convergent ability are equally drawn to an interest in the arts.

TABLE V
DISTRIBUTION OF PREFERENCES TO EXCEL AT WORK, FOR GIRLS AT DIFFERENT AGES

(some preference: score 3, 2; no preference, score 1)

Cell:	A		D		B		C	
Type of girl:	<i>"Hudson"</i> <i>converger</i>		<i>"Hudson"</i> <i>diverger</i>		<i>Both tests</i> <i>high</i>		<i>Both tests</i> <i>low</i>	
Scores:	3, 2	1	3, 2	1	3, 2	1	3, 2	1
Ages: 12-14	18	21	19	12	42	12	25	17
15	19	18	25	21	30	20	29	22
16-18	41	20	40	24	57	34	55	42
Totals:	78	59	84	57	129	76	109	81

It might be expected that convergent ability would align with a preference to excel at work. However, comparing A and B types against C and D yields $\chi^2 = 0.11$ which shows that girls of high or low convergent ability say they are equally drawn to an interest to excel at work. Using Hudson's definition to compare type A against type D, we find $\chi^2 = 0.19$ which shows that preferences to excel at work do not depend on this distinction either. Girls with high ability on both tests are slightly more inclined to want to excel at work, though this difference is not quite significant at the 0.05 level ($\chi^2 = 3.14, p < 0.1$). Comparing all the highly divergent scorers (B and D) against low divergers (A and C) gives $\chi^2 = 2.75$ which is not significant. Thus neither convergence nor divergence simply, nor in combination enable us to distinguish preferences to excel at work.

A third subject is one that has some real relevance in girls' schools, and this is domestic science.

Comparing the Hudson-defined types shows no difference in preferences ($\chi^2 = 0.04$). Girls who are poor on both tests, however, are very much more likely to be keen on domestic science ($\chi^2 = 25.9, p < 0.001$). High convergence by itself compared with low convergence is associated with less keenness at domestic science ($\chi^2 = 13.4, p < 0.001$); high divergence is also, though less strongly, associated with less desire to excel at domestic science ($\chi^2 = 8.18, p < 0.01$). In general then, preference for domestic science

is associated with poorer ability; particularly convergence shows this, though divergence clearly does so too. Combining tests in the manner of Hudson completely removes any discriminatory power, while combining in the same direction strongly increases the discrimination.

These associations of preferences with ability on tests are reflected in a series of correlations calculated by computer, taking in more girls than in the samples above. These show that preference for art and

TABLE VI

DISTRIBUTION OF PREFERENCES TO EXCEL AT DOMESTIC SCIENCE, FOR GIRLS AT DIFFERENT AGES

(some preference: score 3, 2; no preference, score 1)

Cell:	A		D		B		C	
Type of girl:	"Hudson" converger		"Hudson" diverger		Both tests high		Both tests low	
Scores:	3, 2	1	3, 2	1	3, 2	1	3, 2	1
Ages: 12-14	13	26	13	18	12	42	20	22
15	18	19	18	28	14	36	29	22
16-18	16	45	19	45	16	75	35	62
Totals	47	90	50	91	42	153	84	106

divergent ability correlate 0.14 ($N = 840$, so $p < 0.01$), while art preference and convergence are not related ($r = 0.007$). Preference for domestic science correlates negatively with convergence ($r = -0.16$, $N = 840$) and more strongly so with divergence ($r = -0.21$, $N = 840$).

There is likely to be as Hudson suggests (1966, p. 114) some connexion between "progressive" schools and the nature of the pupils therein. Lytton and Cotton (1969) looked for evidence on this in four schools, but could not find evidence to support the hypothesis. In this study, schools were given a score on a scale of "Institutional Control" essentially similar to that devised by Lambert et al. (1968). As the tests were given in each school to a representative form at each age level, though this method might still introduce errors due to inequalities in sizes of forms at each school, mean scores were nevertheless calculated for each school on both tests. Rank order correlations show that no link appears to exist between institutional control and levels of convergence ($r_s = 0.03$), but institutional control does vary with divergence ($r_s = 0.43$, for $N = 20$, $p < 0.05$); at the more enient schools higher levels of divergent scoring (but not of convergent scores—nor lower convergent scores either) are found. This probably reflects a selection mechanism in that certain parents who

will have brought up their daughters in a less authoritarian, more expressive way will send them to the more permissive schools. Educationally, we can suggest that lower institutional control gives greater freedom for personal expression, which shows in test results; it does not affect convergent ability evidently. Nor is there anything to suggest that greater institutional control or discipline is in any way related to better ability on convergent tests.

Schools with high levels of aspiration to excel at domestic science tend to be lower in the rank order of scores on convergent ability ($r_s = -0.40$, for $N = 20$, $p < 0.05$) and even more clearly so on divergent ability ($r_s = -0.68$, for $N = 20$, $p < 0.01$). Schools generally higher on convergence are not predictably higher or lower on divergence ($r_s = 0.30$, $p > 0.05$); however, schools with larger sixth forms tend to be those with higher divergence ($r_s = 0.45$, for $N = 20$, $p < 0.05$); the same cannot so clearly be said for higher convergence occurring with larger sixth forms ($r_s = 0.35$, for $N = 20$, $p > 0.05$).

An important educational criterion, that of the satisfaction of the pupil in school may now be examined. Hudson (1968, p. 13) suggests that greater satisfaction might be associated with convergence (as he defines it); however, the correlation between satisfaction and convergence (as defined here) is not significant ($r_s = 0.02$); the relation with divergence is larger, though still not significant at commonly accepted levels ($r_s = 0.33$, for $N = 20$, $p > 0.05$).

TABLE VII

DISTRIBUTION OF RELATIVE SATISFACTION, FOR GIRLS AT DIFFERENT AGES

(score 1, happy; score 3, 2, not so happy)

Cell: Type of girl:	A "Hudson" converger		D "Hudson" diverger		B Both tests high		C Both tests low	
Scores:	3, 2	1	3, 2	1	3, 2	1	3, 2	1
Ages: 12-14	27	12	24	23	45	21	37	19
15	30	10	43	18	40	23	44	18
16-18	41	32	46	32	70	58	75	38
Totals:	98	54	113	73	155	102	156	75

Comparison of girls of types A and D shows a similar distribution of satisfaction (chi sq = 0.56, N.S.). Girls of higher ability in general (type B) include a slightly greater proportion of those who are happy, but this is not significant (chi sq = 2.58, N.S.). High convergence alone occurs with equal satisfaction as does low convergence (chi sq = 0.62); while high divergence alone shows some sign of including

a greater proportion of the happier girls, but this again is not significant ($\chi^2 = 3.03$, for $df = 1$, $p > 0.05$). The slight possibility that happiness is associated with divergence may be interpreted as likely to be mediated by variables such as institutional control which correlates well with the level of satisfaction in schools ($r_s = 0.68$, for $N = 20$, $p < 0.01$) and also with divergence (see above).

6. DISCUSSION AND CONCLUSIONS

A "job analysis" of the process in creative behaviour would probably reveal that both "divergent" imaginative new thinking, as well as the ability to crystallise from this new material new forms or products would be involved. For the one Beethoven who produced great works there may have been several whose musical imaginings, even whistlings or hummings, were never recorded nor worked towards their creator's idea of perfection, or a good solution. The same will apply in any field of endeavour. Creativity implies not making things, however complex, which already exist, but making new forms. At the same time, an individual who merely "diverges" (unless his product is harnessed by others, who together form a creative team) cannot properly be called creative. Otherwise, where no recorded product is involved, one could extend the label "creative" to the dreams and subconscious and inaccessible transactions of any and every individual, and the term loses its meaning.

Creativity, as Hudson finds, may occur in different fields, artistic or scientific. The probability that the output of English Public and Grammar schools divides into two sub-cultures, of scientists and others, leaves the others who have ability to make their mark in a variety of professions and fields. One of these being a literate area of publishing, journalism, authorship or advertising finds itself in a relatively insecure sector of the economy. Those who survive and thrive are in possession of the media in which they sing their own praise. The stereotype can readily be created and reinforced then, that "the arts man", whose forte is divergence, is creative; the scientist is the mole-like one whose machinations are less easy to understand, frequently loaded with threatening implications. The stereotype is ready for him, to efface him or "de-create" him with the implied notion that as he is a "converger" he is "not so creative".

The present findings avoid an arts-science polarity. This is because of the comparatively low salience of science in most of the 20 schools studied. This enables us to see that a "bias" definition of convergence is not the most fruitful way of understanding other personal attributes

Convergent ability by itself is not related to indices of performance, interest preference (except domestic science) or satisfaction. Divergence by itself is related, principally to performance, to some aspects of interests, though not to satisfaction. In most cases where divergence is associated with some other index, the effect is increased if the girls have high convergence as well. This differs from Hudson's approach which finds differences between those who are *relatively* higher on one ability than the other.

It is important to note that taking schools themselves as subjects, relationships can be discerned between different attributes and their likely concurrence. This means that where research is done in a few schools only, of similar type, a situation will be found that will not pertain generally when the study extends to more schools. In that the output of pupils from Public and Grammar schools will be a steadily decreasing proportion of the total school leavers nationally, the stereotypes that stem from their "two-culture" system could be steadily less formative of the culture and ethos of those who leave comprehensive schools—that is if the exponents and popularisers of research cease to propagate only this stereotype.

The present data are just as unrepresentative of comprehensive education as Hudson's. However, they do show that the existing stereotypes are neither conceptually well-based, nor universal.

Future research might well devise true indices of creativity (unlike the scale here which cannot be regarded as valid for "creativity" as it consists only of one person's rating). It should take place in comprehensive schools and might investigate the possibilities that as well as convergence and divergence, introversion and field independence (which the present "convergence" test was also designed to try and measure) might also be related to creativity. It may also be necessary to establish a typology of creativity, both individual and social.

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SCHOOL SIZE AND HEAD TEACHERS' BUREAUCRATIC ROLE CONCEPTIONS

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INTRODUCTION

YEAR by year in Great Britain an increasing number of large-size schools are created as a result of schemes of secondary re-organisation and consolidation (Westwood, 1967; Monks, 1968). These larger school organisations are attracting the attention of sociologists and social psychologists interested in the consequences of increasing school complexity and specialisation (Hoyle, 1969; Watson, 1969). As yet, however, few empirical studies have attempted to relate growth in the size of the school to changes in its organisation or in the role conceptions and role performances of its professional personnel.

Weber's (1946, 1947) concept of bureaucracy has been applied to the school as an organisation, though not without reservation. The limited utility of the Weberian concept of bureaucracy in the light of a number of unique attributes of the school has been the subject of considerable discussion (Litwak, 1961; Etzioni, 1961, 1964; Bidwell, 1965; Corwin, 1965; Brim and Wheeler, 1966; Anderson, 1967, 1968; Punch, 1969). Although the concept of bureaucracy may lack overall relevance to the school as an organisation, the *bureaucratisation* of the school has been seen as the most likely educational development in the immediate future (Swift, 1969).

In Great Britain, Burnham's (1964) study of the role of the deputy head noted a division of labour in respect of the head teacher's expressive and instrumental leadership in the secondary schools that he examined. Turner's (1969) participant observation in one secondary school which increased its enrolment over a number of years drew attention to a change from charismatic-traditional leadership on the part of the headmaster to a bureaucratic exercise of authority.

North American evidence on the relation between school size and administrative behaviour is more extensive though not unambiguous. Bidwell (1965) accepted that large school systems faced increased

problems of co-ordination and communication and would probably end to become more highly bureaucratised but found little empirical evidence to support this conjecture. Terrien and Mills' (1955) finding of increased school size being significantly related to the recruitment of administrative cadres was not accepted by Bidwell as evidence of bureaucratisation as such.

Gross, Mason and McEachern (1958) found superintendents of large school systems assuming greater responsibility for their subordinates' work than small school superintendents and at the same time delegating responsibilities more readily to subordinates. Bowman (1963) found both superintendents and school board members in large systems expected the superintendent to act as chief decision maker.

Hartley (1964) reported that size of school was related to the extent of its bureaucratic practices and suggested that larger schools tended to be staffed by comparatively well trained administrators and teachers. Hussein (1968) suggested that the size of the school and its consequent organisational structure was inimical to the teacher's participation in decision-making and their resulting satisfaction and morale. Studies of Canadian school systems (MacKay, 1964; MacKay and Robinson, 1966) which supported the hypothesised relationship between size and bureaucratisation opined that highly bureaucratised schools were antagonistic to the development of professionalism on the part of teachers as revealed in their low emphasis on competence.

Punch (1967) however, researching in Ontario school systems, found that, "unexpectedly, school size and system size were each significantly negatively related to bureaucratisation". He proposed that "the principal's leader behaviour style [was] by far the most important single determinant of level of school bureaucratisation".

Laidig's (1967) study of elementary schools in Texas found no relationship between the size of the school and bureaucratic administrative behaviour. Egner's (1967) proposition that the weight of administrative routine in a large school would prevent the principal from giving effective instructional leadership to his teachers was not borne out in two studies involving small samples of head teachers (Jones, 1967; Boilensen, 1968). Gross and Herriott's (1965) National Principalship Study did, however, provide strong evidence of a significant negative relationship between the size of the school and the degree of "executive professional leadership" (getting teachers to improve their classroom teaching) emanating from the school principal.

On balance, the research evidence points to a relationship between the size of the school and the bureaucratisation of its organisation.

This paper examines the relationship between size of schools and the degree to which their head teachers hold bureaucratised role conceptions. By *role conceptions* we refer simply to the beliefs that head teachers hold about what they should or should not do as incumbents of the head teacher position. The bureaucratic manifestations of those beliefs are considered in detail below.

METHOD

A Head-teacher Role Definition Instrument (HRDI) based upon the Leader Behaviour Description Questionnaire of Stodgill and Coons (1957) and the Superintendency Role Inventory of Gross, Mason and McEachern (1958) was developed with the assistance of head teachers and ex-head teachers. It consisted of 78 statements of head-teacher behaviour describing the head's relationships with pupils, teachers and parents. In its final form (test-retest reliability $r = .80$) the HRDI was completed by 343 (86.8%) of a national sample of 395 head teachers randomly selected from schools throughout England and Wales. Schools with 301 or more pupils on roll were design: as *large*; schools with 300 or less pupils as *small*. The choice of 300 as the cut-off point was based upon references in the literature to that number as the size beyond which a head is no longer able to know each child individually. The sample consisted of 196 small and 147 large-size schools.

Weberian elements of organisational bureaucracy were purposely adopted in order to test their applicability to the particular situation of the school.

The study was concerned with the relationship between the size of the school and the following bureaucratic features of its head teacher's role conceptions:

- (1) his legal authority as head teacher;
- (2) his concern for a hierarchically structured authority system within the school and the maintenance of "social distance" between members;
- (3) his application of universalistic as opposed to particularistic criteria in the governing of relationships between organisation members;
- (4) his emphasis upon the application of rules and regulations govern procedures;

- (5) his stressing of activities which promote continuity of procedures and their standardisation within the school;
- (6) his support for procedures which lead to increased technical competence in organisation members;
- (7) his promotion of organisational expertise by the implementation of suggestions from outside expert sources; but, at the same time,
- (8) his protection of the organisation from outside pressures arising from non-expert, non-technical sources;
- (9) his concern for the communication of information to organisation members and the receipt of information relevant to the functioning of the organisation.

Hypotheses were formulated in connexion with each of the nine criteria of bureaucratic role conceptions outlined above, and appropriate HRDI items were selected by which to test those hypothesis.

The frequencies of the responses of large-school head teachers and small-school head teachers on a 5-interval scale showing direction and intensity of beliefs were compared by chi-square analysis. In addition, the large and small school samples were further broken down by "type of school"* (infant, junior, secondary) since type of school is probably related to organisational complexity and degree of specialisation.

In reporting those statements of head-teacher behaviour on which there were significant differences between the role conceptions of large and small-school head teachers, only where the initial large-school/small-school analysis was subsequently supported when "type of school" was controlled (i.e. large-infant/small-infant, or large-junior/small-junior, or large-secondary/small-secondary) is the HRDI item advanced as evidence of a relationship between size of school and the bureaucratisation of head teachers' role conceptions.

The .05 level of statistical significance was adopted throughout the analysis.

RESULTS

(1) *The legal authority of the head teacher*

Large-size school head teachers gave significantly stronger support

to:

Item 42. "Expect staff to carry out his decisions even when they believe them to be unsound."

	Infant	Junior	Secondary
Large schools	22	41	84
Small schools	88	82	26

(n = 343)

Item 77. "Let parents know what he considers to be desirable standards concerning school dress, time devoted to homework etc."

Item 78. "Send for parents of children whose attitudes or behaviour do not satisfy the standards he requires for the school."

(2) *His concern for a hierarchically structured authority system within the school and the maintenance of social distance between members*

Large-size school head teachers were not differentiated from small-size school heads.

(3) *His application of universalistic as opposed to particularistic criteria in the governing of relationships between organisation members*

Large-size school head teachers were not differentiated from small-size school heads.

(4) *His emphasis upon the application of rules and regulations to govern procedures*

Large-size school head teachers gave significantly stronger support to:

Item 21. "Insist that children's personal record cards be kept up-to-date by teachers and secretarial staff."

Item 40. "Require records or forecasts of every teacher's work."

(5) *His stressing of activities which promote continuity of procedures and their standardisation within the school*

Large-size school head teachers gave significantly stronger support to:

Item 29. "Forbid teachers to use classroom methods that are, in his opinion, too 'outlandish' and impracticable."

(6) *His support for procedures that lead to increased technical competence in organisation members*

Large-size school head teachers were not differentiated from small-size school heads.

(7) *His promotion of organisational expertise by the implementation of suggestions from outside expert sources*

Large-size school head teachers gave significantly stronger support to:

Item 53. "Implement suggestions made by Her Majesty's Inspectorate for the improvement of some aspect of the school curriculum or teaching methods."

- (8) *His protection of the organisation from outside pressures arising from non-expert, non-technical sources*

Large-size school head teachers gave significantly stronger support to:

Item 55. "Resist external pressures from parents to alter the school curriculum or the teaching methods used."

- (9) *His concern for the communication of information to organisation members and the receipt of information relevant to the functioning of the organisation*

Large-size school head teachers gave significantly stronger support to:

Item 22. "Require important incidents concerning pupils in out-of-school hours to be brought to his notice."

Item 66. "Require staff to be available to discuss pupils' work at a school 'parents' evening'."

DISCUSSION

Irrespective of whether or not schools were infant, junior or secondary, six of the nine criteria of bureaucratisation adopted in the analysis served to distinguish between the role conceptions of large- and small-school head teachers. These data provide support for the major hypothesis that the size of the school is related to bureaucratised role conceptions on the part of its head teacher.

The second criterion of bureaucratisation (the head's concern for a hierarchically structured authority system and "social distance" between members) was supported in the initial large-school/small-school analysis, large-school heads giving significantly *less support* to encouraging an equal voice to young and old teachers in school affairs, and to meeting members of staff informally in the head teacher's home. These distinctions were not however maintained when "type of school" was controlled. Similarly, in connexion with the sixth criterion (the head's support for procedures leading to increased technical competence of teachers), it was found that large-school heads held significantly stronger expectations that staff should support in-service professional courses relevant to their subject or age-range. Controlling for "type of school" failed to support the initial analysis. The weakest criterion of bureaucratisation was that which suggested the application by the large-school head teacher of universalistic as opposed to particularistic considerations in governing his relationships

with organisation members. None of the selected HRDI items detailing the head's relations with pupils, teachers or parents differentiated between large- and small-school head teachers in the initial analysis. This latter finding reflects the criticism of Bidwell (1965), Brim and Wheeler (1966) and others that it is precisely because the school is a "people-processing" organisation, whose "members are its products" (Swift, 1969), that universalistic criteria cannot be applied "universally". The data showed the large-school head to exhibit a degree of concern for the individual child, the individual teacher, and the particular parental request equal to that manifested by his small-school colleague.

The analysis as a whole supports those who have proposed that the large-school head's dilemma, arising out of the need to co-ordinate the activities of a large, heterogeneous, and perhaps specialist staff, may find resolution in a more rigid specification of the rights, privileges, and responsibilities of positions within the school and a greater concern with rules and regulations by which to govern its everyday procedures (Charters, 1964; Burnham, 1969). Studies which are now in hand (Taylor, 1969) concerning the *actual behaviour* of head teachers in connection with their routine school duties may show to what degree the bureaucratic role conceptions of large-school head teachers are evinced in their everyday role performances.

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RECENT DEVELOPMENTS IN THE PHILOSOPHY OF RELIGIOUS EDUCATION

A REVIEW ARTICLE

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IN the middle decades of this century there was a generally accepted philosophy of religious education. The whole of education was to be consistent with, and where possible directly derived from, Christian beliefs. The school was to be considered a Christian community. No clear distinction was made between the roles of the church and the state school. The function of religious education as part of the curriculum was to create Christian discipleship. All teachers were preferably to be Christians; teachers of religion could not be effective unless they were Christians. Worship was the natural climax of the whole thing: here the Christian community, led by believing teachers, explicitly affirmed faith in God (1). At the same time there was steady emphasis on the freedom of the child, this being a consequence of the Christian idea of personality, so that while intending and hoping to create Christian discipleship, Christian education would foster independence and seek for a free response.

This philosophy was never articulated in detail. As late as 1956 Rupert Davies remarked on the variety of half-formed ideas and commented on the need to explore the matter more thoroughly (2). He himself however accepted the general outline I have described. This will never now be worked out in detail, since the very foundations of the approach have been shaken.

The changes which are taking place have sprung from a realisation that the old philosophy is not producing results. The increasingly rapid pace of secularisation and the variety of religious and non-religious views which have taken the place of the Christian establishment of the 1940s can no longer be denied. Evidence of the extent to which pupils understand and accept Christian doctrine and biblical

teaching is discouraging in terms of the old expectations. The gap between the ideal and the reality becomes more and more threatening. Not until the model finally breaks down do you go right back to the drawing-board.

The writings which promoted the very significant changes in religious education during the 1960s dealt with the psychology of the religion of children and young people, and with method (3). There was little work done on the philosophical and theological theory of the new approaches, except in Roman Catholic circles. Here there has been considerable new and valuable thought (4), but the impact on the county schools has been understandably slight. It is also indicative of the serious plight of Christian educational theory that such new writing as has appeared has dealt in the main with religious education as a subject of the curriculum and not with the total relationship between religion and education (5). Indeed, instead of discussion about the place of religion in education as a whole we now have discussion about the place of morals in education as a whole (6).

Turning then to the more restricted field of the philosophy of religious education as a school subject, mention must first be made of the work of Ninian Smart. *The Teacher and Christian Belief* appeared in 1966 and was followed in 1968 by *Secular Education and the Logic of Religion*. In Professor Smart's writings the secular environment in which any teaching of religion at any level must be carried out is taken with complete seriousness. This was seldom the case in earlier writings. W. R. Niblett's *Christian Education in a Secular Society* (1960) although valuable in many other respects is disappointing on this matter. It pre-dates the discussion of the secular which has been a central theme of theology in the last few years. Ninian Smart, while not accepting the claim, often repeated, that we are heading for a time of no religion, is convinced of the increasing plurality of British society, and the consequent necessity that the state and the official institutions of education should be neutral.

Religious education is thus presented with a dilemma. "... Christian education is entrenched in our school system" and yet "the typical modern institution of higher education is secular—that is, neutralist in regard to religious and ideological commitment" (7).

Professor Smart's argument is that far from an open, descriptive, comparative and even perhaps neutral approach to religious matters being inappropriate for Christian education the inner nature of the Christian religion leads one to teach it in just such a manner. Christian doctrines cannot be intelligently believed to-day without attention

to the problems of philosophy which the doctrines raise. Christian doctrines overlap with areas of scientific inquiry (e.g. the doctrine of creation) and of historical investigation (the trial and death of Jesus). Evaluation of other forms of religious experience and other claims to religious truth is bound to follow from the Christian's meditation on his own experience and his belief in the truth of his own religion. In short, just because Christian truth claims to be universal, and to be all inclusive, and to be internally coherent, it must set up a dialogue with the rest of experience and with other kinds of truth.

This means that Christianity must be taught not as a self-enclosed self-authenticating system of truth, but by discussion, comparison, weighing of arguments, all without prejudice to the final outcome. Religious education therefore, to be true to the very nature of Christianity, must explore the relationship between revelation and modern thought. This dialectic between faith and the world can in principle be set up even before pupils reach intellectual maturity. Movement from contemporary problems to the Bible and back again as a method of religious education is thus seen to have a justification in the very process of religious thinking (8).

Ninian Smart's two books on this subject are themselves a guide to the sort of religious education their author advocates. Various views are clarified, contrasted, compared, the arguments for and against described, but the search is not brought to a premature end by a hasty or over-forceful disclosure of the teacher's own view. The style is witty, brief, and lively, the argument is presented so as to create discussion rather than close it.

Two problems are discussed which arise from this approach. The first is the problem of doctrine. For, it might be thought, the history of religions may be taught in the objective open way described, but surely doctrine must be left out. Professor Smart's reply is in the form of an analysis of the structure of religions.

It is shown that "parahistorical" questions (matters of doctrine, myth and ethics) cannot be separated from the historical aspects of a religion (its ritual, its experiential and its social existences). To omit the parahistorical would be to seriously distort the nature of religion. But this aspect of religion must be taught in the same open way. The doctrines must not be taught as if they were true, but in constant tension with the alternatives. Such teaching must have "the aim of creating certain capacities to understand and think about religion" (9).

But what about the faith of the teacher? Must he not be a believer

to teach religion? Ninian Smart's reply is that he need not be a believer. Some of the best descriptions of religion are provided by outsiders (10). But the teacher of religion must have a certain kind of relation to his subject if it is to be taught effectively. He must have a point of view, which must be reflective and heuristic. Only this "can put us in a position effectively to engage in the dialogue with those who themselves, in the process of learning, are reaching out towards a point of view" (11).

The teacher must also be sympathetic towards religion. If he is a humanist, he must be sympathetic towards the value which men have placed upon religion; if a Christian, he must be sympathetic towards doubt. "The good teacher is not the Christian one or the humanist one. The good teacher is the open one" (12). The views of the conservative evangelical may be educationally disastrous, because such a position tends to stop questions by imposing a total pattern of belief.

This then provides a basis for a religious education which will be true to itself, which will be educationally appropriate, which will be taught by teams of teachers of various faiths and non-faiths, and which will interlock with other subjects in a fruitful way.

What problems remain? The principles of the teaching of religion ought, says Professor Smart, to be essentially the same at all levels (13). What then becomes of the common idea of religious education as a contribution to the personal growth of the pupil? For we do not usually think of universities teaching theology in order to meet the needs and promote the growth of students. Or do we? Ninian Smart has some valuable suggestions to make about the progressive growth in understanding of pupils, but the question of what role if any religion has in the education of younger children remains open. Of course, Ninian Smart is writing as a theologian not as a psychologist, and his approach does not exclude other approaches to the teaching of religion, provided his basic requirements are not infringed.

An observation may be made about the basic argument dealing with the educational implications of the nature of religion. If the logic of religion leads towards the open inquiry, conducted by the sympathetic but not necessarily committed teacher, then what should we be doing in the churches? What sort of education ought to be provided in Sunday schools, junior churches and theological colleges? Does the logic drive us towards a similar conclusion about the education offered within the believing community? If so, Professor Smart is suggesting a revolution in Christian education of unparalleled pro-

portion. This possibility must not be ruled out! But if not, then we must ask to what extent the policy he puts forward for religious education in the official institutions of the state is really governed by the logic of religion rather than by sociological considerations such as the increased plurality of beliefs.

The position is, I think, that we must have the type of neutral religious education advocated by Ninian Smart because of the sociological factors, and it so happens ("It is a happy world" (14)) that this approach is *consistent with* the nature of Christian thought. It is probably an overstatement to say that that type of religious education is *required* by the nature of Christian thought. Dialogue and the investigation of relations with other fields of knowledge and experience is indeed demanded by the nature of Christian belief, but it is sociological factors rather than theological inferences which lead to the suggestion that this education may be conducted apart from the premiss of faith. That suggestion, to repeat the point, can only be consistent with Christian faith; it cannot be required by Christian faith (15).

In 1969 the S.C.M. press published *Religious Education in a Secular Setting* by J. W. D. Smith. The argument of this important study requires close analysis. After a brief review of the current debate about the aims of religious education in state schools, the history and present position of the subject in England, Wales and Scotland is considered. J. W. D. Smith concludes that the decision in the early 1940s to commit the state to a programme of Christian education was already anachronistic, because of the rapid process of secularisation already taking place. The 1944 Act has perpetuated the fiction that the church and the state are partners in education.

The main argument begins in chapter three, with a discussion of the nature of religious language. This, since it is no longer meaningful to many pupils, creates a difficulty in communication which is the central problem in religious education to-day.

The argument is confused at this point by an attempt to illustrate the ineffectiveness of religious language by reference to the linguistic philosophy of Wittgenstein. The trouble is that J. W. D. Smith does not distinguish between Wittgenstein's interest in the logical status of religious language and his own (Smith's) interest in its sociological status as a language used by a shrinking group of people. The blurring of this distinction is seen, for example, in the question, "Is religious language still meaningful universally . . . ?" (16). If this refers to the logic of religious language, the word "universal" is redundant, since

logically sound propositions remain so anywhere in the world, whether they are thought to be important or not. But if the question refers to the possibility that fewer people are using religious language, then this is not a matter which concerned Wittgenstein as a philosopher.

On the same page the educational implications of linguistic philosophy are stated in an inadequate way. "If religious language is no longer meaningful to everybody, it would surely follow that religious education would only be viable within the limited circle of religious believers." But if, as it seems, the logic of religious language is such that it can only be appreciated by understanding the community which uses it, it is by no means impossible nor inappropriate to educate people into the meaning of that language. Pupils can come to know what that community is and what its members say, just as they are initiated into the language games of physics and music. They can understand its logical meaning even if they reject its truth or its importance. Of course, and this may be what J. W. D. Smith intends to say, the religious education given to all in the belief that what religious people say is worth studying will differ from the Christian education given to the religious few in the belief that what religious people say is in fact true.

What linguistic philosophy has to teach us about religious education is, I think, that since the meaning of propositions resides in their use, teachers should show how religious groups actually use their own speech, and what other things they say about religion which are similar to the particular item under discussion. Religious language cannot be understood (its logical status cannot be grasped) in isolation from the living community which uses it. These inferences are based upon the later Wittgenstein, and the argument of chapter three would have been clarified if it had been modified at this stage by the reappraisal of the later Wittgenstein which is referred to later.

The position of the early Wittgenstein is however badly explained, and that is also true of the significance of the later Wittgenstein. For although we now see that a language game, although played by rules of limited application, is intelligible to those who understand the rules, J. W. D. Smith, still remarks on the failure of theology to "restore traditional religious language to universal currency" (17). This is not an apt criticism of Ian Ramsey, whose book is being discussed now by J. W. D. Smith, for Ramsey is not trying to establish the objective verifiability of religious language, let alone trying to restore it to universal use, or to make it seem important to everyone, but merely to show that as used by the religious group, religious

language is not without an appropriate logical structure. The question of logic is again confused with the various sociological factors which make it hard for many young people to use religious language.

The distinction between a meaningful private language and a language game is never made clear. "Traditional religious language has become a private language in the modern world because traditional religious commitment is a minority experience" (18). But in Wittgenstein a minority language differs both from a language game and from a private language. The logical structure of a language is not affected by the number of people who speak it. In the sentence just quoted, a distinction should be made between secularisation as a historical process ("has become . . .") and secularisation as a consequence of logical assertions.

Chapter three then makes an important and valid claim about one difficulty of teaching religion to-day, but the chapter would have been clearer if some of these distinctions had been listed, or if the claim had been supported by more psychological and sociological observations and the discussion about Wittgenstein and Ramsey either curtailed or left out altogether.

Chapter four, "Is Moral Education Enough?" presents a surprising contrast. Metaphysics, ruled out previously as being a private language (*sic*), logically meaningless because incapable of verification, is now re-instated. "We may need to learn a new language in order to discuss age-old themes, but the themes themselves may be valid and meaningful" (19). Previously however the author seemed to be agreeing with the early Wittgenstein, in saying that metaphysical questions arise out of logical confusion. The concept of the inexpressible showing itself (20) (= age-old themes) is of no use to us in understanding the new claims of this chapter for we cannot know if the expressible is (logically) valid or (logically) meaningful until it is expressed in propositional form. To discover and assess these age-old themes we will need language; whether new or old is indifferent to their logical status.

It is not easy to determine the direction of the argument in this chapter, but the main point is that morals without religion are not enough, since morality, if argued sufficiently deeply, leads to questions about man which are also religious questions, or which may at least be answered by religion. "This path leads beyond the secure territory of linguistic analysis towards the frontiers of the unknown—the area once cultivated by metaphysicians" (21).

At this point Martin Heidegger is discussed. Not only is morality

rooted in human nature, and is thus "a game which everyone must play" (22) but now it appears that religion is also rooted in "the very structure of man's existence as a finite being" (23). The author thus asserts on the basis of Heidegger what he had refused to allow on the basis of Wittgenstein. It may have been his intention to expose the limitations of the linguistic approach, as is mentioned on page 36, but on the other hand, it is hard to resist the opinion that chapters three and four are not consistent.

The following chapters are interesting and more coherent. It is suggested that in the philosophy of Martin Heidegger an analysis of human existence can be found which may provide a new basis for religious education, acceptable to Christians and humanists alike. The element of mystery in life, particularly that felt in the presence of death, cannot be ignored without damage to the personality, and it is in the area of fostering the growth of loving trust towards life that religious education can contribute to the health of boys and girls.

Just as in the third chapter a problem arose about the earlier and the later Wittgenstein, so here there arises a problem of choice between the early and the later Heidegger. The early Heidegger teaches that authentic existence can be attained by the determined self without outside aid. The later Heidegger is inclined to look, for the possibility of authentic existence, to the gracious power of being itself. Religious education based on the earlier work would tend to be humanistic, but if based on the later work it would tend to include some emphasis on trustful response to the divine grace.

What answer does J. W. D. Smith offer to the educational problem of the two Heideggers? Religious education based on the early Heidegger is rejected. "Religious education would be impoverished if it were reduced to 'religionless' teaching" (24). The difficulty here is that the dimension of mystery, as expounded by the early Heidegger, had previously (25) been regarded as "the religious dimension of human life". But nevertheless, to base a philosophy of education on the early Heidegger would now apparently provide a religionless teaching. It is difficult to avoid the conclusion that the early Heidegger is here rejected for a reason not unlike that which had formerly led to his acceptance, namely, his analysis of the human situation without recourse to the supernatural.

The attempt to base religious education on the work of Heidegger is thus not without its difficulties. But the original and striking feature of this book is that it should have been attempted. In this

respect, these pages are full of promise and point the way to a treatment of religion in schools which will deal with basic human problems but not in such a way as to presuppose the truth of Christianity or even, perhaps, the existence of God.

In chapter seven J. W. D. Smith returns to the appraisal of the religious educational scene, and in a most convincing manner it is shown that Christian education, in the sense of education based specifically on presuppositions about the truth of Christianity and aimed at establishing Christian belief, can no longer be given in the state schools. Christian imperialistic aims are no longer appropriate in religious education nor can Christianity any longer expect to provide a framework to restore wholeness to the curriculum.

The function of the religious education given in the schools will be to deepen the sense of existential mystery and to facilitate personal growth towards love by a factual objective study of Christian origins and other subjects. Illustrations are given of the difference between the religious and the specifically Christian use of biblical material. Some penetrating criticisms of the Goldman type of life theme are offered. Religious and moral education will be carried out by a team of specialists from various religious and non-religious traditions. The personal beliefs of the teachers will not be very important. "Their personal convictions might be strong, but their professional concern for tolerance and freedom of opinion should be stronger" (26).

A concealed apology for Christianity however runs through the book. Why, for example, is it said that although bringing pupils to an awareness of the mystery of existence will *begin* to fulfil the aims appropriate to religious education to-day, "the Christian interpretation of the mystery at the frontiers of human existence" is that which will "*fulfil* these aims" (27)? Christianity, because of its unique emphasis on love in a human life, is particularly well qualified to assist in personal growth towards love. It looks as if the removal of the aims of religious education from the theological and ecclesiastical realms into the educational realm may in fact, because of the rapport between Christianity and educational psychology, be preparing the way for a Christian renaissance.

The works we have been discussing break important new ground in the theory of religious education. They are prophetic in outlining the future basis of religious teaching in the state schools. Much more work needs to be done, and it is greatly to be desired that these stimulating offerings will lead to a renewal of interest in the theology of education.

REFERENCES

1. This is necessarily rather a simplified summary of the position. But the broad picture is confirmed by a study of standard writings of the period such as Marjorie Reeves and John Drewett, *What is Christian Education?* (1942); Spencer Leeson, *Christian Education* (1947); W. O. Lester Smith, *The School as a Christian Community* (1954) and almost all the then current Agreed Syllabuses.
2. Rupert E. Davies (ed.), *An Approach to Christian Education* (1956), pp. 1-18.
3. e.g. J. W. Daines, *An Enquiry into the Methods and Effects of Religious Education in Sixth Forms* (1962); *Meaning or Muddle? An investigation into the religious concepts held by secondary school children* (1966); K. E. Hyde, *Religious Learning in Adolescence* (1965); R. S. Lee, *Your Growing Child and Religion* (1956). Note the discussion and "life situation" methods pioneered by Harold Loukes, *Teenage Religion* (1961), and Richard Acland, *We Teach Them Wrong* (1963), and the thematic method advised by Goldman in *Readiness for Religion* (1965). One of the few works dealing with the philosophy of the subject was Edwin Cox, *Changing Aims in Religious Education* (1966).
4. e.g. the influential writings of Gabriel Moran.
5. The situation in the United States is the reverse. There is much work being done on the relationship between religion and education, e.g. Theodore R.Sizer (ed.), *Religion and Public Education* (1967).
6. e.g. the writings of John Wilson and the essays edited by Chris Macey, *Let's Teach Them Right!* (1969).
7. *Secular Education and the Logic of Religion*, p. 90.
8. *The Teacher and Christian Belief*, p. 192.
9. *Secular Education and the Logic of Religion*, p. 97.
10. See Smart's article in *Let's Teach Them Right!* ed. Macey.
11. *The Teacher and Christian Belief*, p. 7.
12. *ibid.*, p. 15.
13. *Secular Education . . .*, pp. 7, 99, etc.
14. *ibid.*, p. 106.
15. The comments about the role of commitment (*ibid.*, p. 98) are helpful but the distinction I am making and its implication for the rest of Christian education could do with some discussion.
16. *Religious Education in a Secular Setting*, p. 24.
17. *ibid.*, p. 31.
18. *ibid.*, p. 33.
19. *ibid.*, p. 39.
20. *ibid.*, p. 25.
21. *ibid.*, p. 39.
22. *ibid.*, p. 37.
23. *ibid.*, p. 39.
24. *ibid.*, p. 61.
25. *ibid.*, p. 51.
26. *ibid.*, p. 102.
27. *ibid.*, p. 113.

IMPROVEMENT IN THE LOGIC OF EIGHT-YEAR-OLD CHILDREN

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ABSTRACT

A controlled experiment was carried out with 70 primary children divided into experimental and controlled groups. The one group had logic based games and the others also had a new activity. It appeared that there had been an improvement in logical thinking on the part of the experimental group. It is concluded that children might benefit from structured teaching for logical thought.

I. PURPOSE OF EXPERIMENT

THE growth of logical judgments in children has been described as following a developmental pattern. This does not preclude its improvement or acceleration by means of enriched experience, for "learning is not a matter of associating the right answers with the right questions. It is much more a matter of responding to a question by means of the right anticipatory schema" (Lunzer, 1960, p. 52).

The purpose of this present experiment was to investigate what improvement there might be in the logic of eight-year-old children after teaching by means of games with beads and counters.

Although many adults can now accept that concepts of reversibility in numbers, conservation of weight etc., have to develop gradually in the child, far less recognition is given to the limitations of *logical* concepts held by children.

Class membership demonstrates some of these limitations. If a child under about six years is given a set of wooden beads, of which only two are white and all the rest are brown and asked which make the longer string of beads, all the brown beads or all the wooden beads, he does not see the brown beads as a sub-set of the wooden beads. He compares brown with white or can think of all the beads as wooden, because there are only two white ones left (Piaget, 1952, p. 176). The process which is beyond his understanding is that of

simultaneous classification. Another example which demonstrates this phenomenon is given in *The Early Growth of Logic in the Child* and demonstrates one of the many limitations of the child's understanding of phrases in common adult usage, which we often assume the child understands in full—"all" and "some".

With pictures of ducks, horse, cat, other birds and a mouse:

Question:

"Are all the ducks birds?" "Yes".

"Are they animals?" "Yes."

"If a fox killed all the ducks would any birds be left?" "Yes."

"If he killed all the birds would any ducks be left?" "Yes."

Or to take an example used by Peel and Davies:

"In the big sweet tin, square sweets are always wrapped in yellow paper. The other sweets are wrapped in all colours."

Daddy picked a round red sweet, a yellow square sweet, and a long yellow sweet. They all came from the big tin. Is that right?

If we allow p = square, then \bar{p} = not square.

If we allow q = yellow, then \bar{q} = all that is not yellow.

It will be seen that p implies q , and that \bar{p} can imply q also.

Therefore $\bar{p}\bar{q}$; qp ; $\bar{p}q$ are all acceptable.

Or to take an example from the bead and counter games:

"If I put red, you must put yellow; if I do not put red, you can put any colour."

Most investigation of logic in children has dealt with the adolescent or pre-adolescent. This is understandable, as there is much evidence of a great spurt in development towards formal thought at around twelve years of age. A similar rapid increase in reasoning appears to take place around 7 or 8 years.

2. PREVIOUS WORK

Piaget, in *The Early Growth of Logic in the Child*, uses symbolic logic to express the 16 binary operations. Taking p and q as representing two contingencies, he expresses the various combinations thus:

	p	\bar{p}
q	pq	$\bar{p}q$
\bar{q}	$q\bar{q}$	$\bar{p}\bar{q}$

e.g. in the statement "Tom wants a watch with figures and a gold strap" p can represent "figures" on a dial, then \bar{p} represents "no figures". Similarly q can represent "a gold strap" and \bar{q} represents "not gold".

From this arise four possible conjunctions:

- figures and a gold strap (pq)
- no figures, but a gold strap ($\bar{p}q$)
- figures, but no gold strap ($p\bar{q}$)
- neither figures nor a gold strap ($\bar{p}\bar{q}$)

This gives all one can say with the two original propositions taken singly. But, if these four terms are taken all together (1), three at a time (4), two at a time (6), one at a time (4), or not at all (1), the 16 binary propositions appear (Peel, 1960).

None true	pq	$p\bar{q}$	$pq \vee p\bar{q}$
$\bar{p}\bar{q}$	$pq \vee \bar{p}\bar{q}$	$p\bar{q} \vee \bar{p}\bar{q}$	$pq \vee p\bar{q} \vee \bar{p}\bar{q}$
$\bar{p}q$	$pq \vee \bar{p}q$	$p\bar{q} \vee \bar{p}q$	$pq \vee p\bar{q} \vee \bar{p}q$
$p\bar{q} \vee \bar{p}\bar{q}$	$pq \vee \bar{p}q \vee \bar{p}\bar{q}$	$p\bar{q} \vee \bar{p}q \vee \bar{p}\bar{q}$	all four true

The adolescent uses these 16 structures and can combine them to formulate theories and reach conclusions deductively. The 7-11-year-old is restricted by facts as he sees them, often compares one aspect at a time when making judgments and only gradually becomes able to manipulate more than one variable.

Considerable exploration of these aspects of children's logic and how it develops has been undertaken at Birmingham. Peel and Davies have devised a test of logic sometimes presenting questions accompanied by pictures and sometimes questions without illustrations. The complete tests as they stood in 1966 consisted of 69 questions in the "VISUAL" test (i.e. with pictures) and 59 in the "VERBAL" test (i.e. with no pictures). They covered all 16 possibilities already mentioned. Alongside these tests of logic, games were devised and developed by Peel, to give practical experience of logical possibilities. A dish of coloured counters is given to the child and a dish of coloured beads is held by the teacher. Instructions are given to the child such as—"If I put red, you must put yellow; if I do not put red, you may put any colour you like" or, "I must not put red

beads. You must only put blue counters. Any colour except red beads is all right. Any colour counter except blue is wrong." By varying and grading the complexity of these instructions it was hoped to improve the logic of the children playing these games.

3. THE PRESENT EXPERIMENT

For a controlled experiment 70 children from a suburban junior school were used. The school was ten years old, had excellent facilities, consisted of eleven classes and had a catchment area which included all types of houses, from substantial owner-occupied to a county home for children in need of care.

These 70 children were all aged eight, 37 from the first-year junior classes and 33 from the second year. Their comprehension (by Schonell Silent Reading test A) ranged from 83 months (6 years 11 months) to 154 months (12 years 10 months) and were distributed according to Table I.

TABLE I

(Note: 8 yrs. 6 mths. = 102 mths.)

<i>Comprehension age in months</i>	<i>No. of children</i>
80-90	12
90-100	14
100-110	7
110-120	10
120-130	7
130-140	10
140-150	5
150-160	2

The parents of three children moved from the area during the experiment, their children changed schools and one of the children was excluded (by random tables) to balance the experimental and control groups at 33 each. From the comprehension tests two random groups were formed; analysis of their comprehension scores showed no statistically significant difference in the comprehension scores of the two groups.

IQs were measured by Raven's Standard Progressive Matrices (brown). All the children were given Peel's Logic Tests—first VISUAL (illustrated) then VERBAL (not illustrated). Total scores were taken for each child (on each of the two tests) giving a pre-teaching VISUAL score and a pre-teaching VERBAL score. Some of the questions in the tests were irrelevancies; example of an irrelevant item:

Statement: "Last night Dick saw the moon and the stars in the sky."

Question: "Dick saw a beautiful red sunset yesterday evening. Is that right?"

By extracting these items a further two scores were recorded— $\text{VISUAL} - \text{IR}$ and $\text{VERBAL} - \text{IR}$ (visual minus irrelevancies, verbal minus irrelevancies).

The lessons

The experimental group of 33 children had games based on logic and the control group of 33 had teaching in fabric printing (including excursions to buy material and so on), the aim being to avoid any "Hawthorne" effect. Each of the 66 children had six ten-minute lessons, given individually, and each child watched part of the "lesson" or "game" of the preceding child. At the conclusion of these "lessons" the original VISUAL and VERBAL tests were repeated. Each child's score was compared with his "pre-teaching" score and any change in performance was recorded as a "gains score". The "gains score" was therefore the difference between each child's score on the logic tests given before and after teaching.

It should be stressed here, that no teaching of the VISUAL or the VERBAL test was given at any time.

4. RESULTS

An analysis of the test was made in four ways:

- (1) VISUAL pre-teaching with VISUAL post-teaching. (VISUAL)
- (2) VERBAL pre-teaching with VERBAL post-teaching. (VERBAL)
- (3) VISUAL pre-teaching with VISUAL post-teaching when irrelevant items were excluded from both. ($\text{VISUAL} - \text{IR}$)
- (4) VERBAL pre-teaching with VERBAL post-teaching when irrelevant items were excluded from both. ($\text{VERBAL} - \text{IR}$)

TABLE II
ANALYSIS OF VARIANCE OF GAINS OF WHOLE SAMPLE
SUMMARY OF TREATMENT EFFECTS

	<i>Tr</i>	<i>Control</i>	<i>F</i>	<i>P</i>	
$\text{VIS} + \text{IR}$	402	230	7.2	.01	Highly significant
$\text{VIS} - \text{IR}$	229	135	2.7		Not significant
$\text{VERB} + \text{IR}$	191	114	2.2		Not significant
$\text{VERB} - \text{IR}$	172	82	4.4	.05	Significant

VISUAL test

When the gains scores of entire groups (all 33 children in each) were compared a highly significant gain was measurable in the performance of the group which had received teaching by the bead and counter games—significantly better, that is than the children who had not had this kind of experience.

This remained true as long as all the items were included, but when "irrelevant" items were extracted, this gain was not statistically significant although the gains of the "teaching" group were much superior to those of the control group.

VERBAL test

On the other hand, when gains on the VERBAL test are compared, it is only when the irrelevant items are excluded that significant gains were made.

It might be inferred that even the control group, without any experience other than increased familiarity with this type of problem were now fairly adept at answering these irrelevant items.

The fourth comparison of Table II is probably the most important. Even after both groups have had three previous tests (two pre-teaching and one post-teaching) this entirely verbal test, unaided by illustrations, illustrates that significant gains in the logical thought of children of this age can be cultivated.

The control group

Gains made by this group were considerable, as can be seen from the summary tables. This is probably due in part to the practice element but also due to the interest which all the children, "control" or "teaching", took in the proceedings. This kind of improvement has been commented upon by others, notably Beard and the Association of Teachers of Mathematics.

Secondly the gains of children of low IQ (as measured by Raven's

TABLE III
ANALYSIS OF VARIANCE OF GAINS MADE BY CHILDREN OF LOW ABILITY
SUMMARY OF TREATMENT EFFECTS

	T.G.	C.G.	F	P	
VIS + IR	168	67	7.4	.01	Highly significant
VIS - IR	104	43	43	N.S.	
VERB + IR	111	43	5.02	.05	Significant
VERB - IR	95	38	3.71	N.S.	

Matrices) were analysed and compared in both the VISUAL and VERBAL tests and also including and excluding irrelevant items.

A third comparison was made when groups of low and average IQ were combined.

TABLE IV

ANALYSIS OF VARIANCE OF GAINS OF CHILDREN OF AVERAGE AND LOW ABILITY

SUMMARY OF TREATMENT EFFECTS

	T.G.	C.G.	F	P	
VIS + IR	317	178	7.175	.01	Highly significant
VIS - IR	191	113	2.6	N.S.	
VERB + IR	157	86	2.77	N.S.	
VERB - IR	133	66	2.92	N.S.	

When Tables III and IV are studied there seems little consistency in the results except that gains were made and could not be ignored. A review of all the tests given to the children seemed to be indicated.

IQ/comprehension/logic

Remarkable discrepancies of performance between logic, IQ and comprehension were observed. It could not be stated that all the children with a high comprehension age performed the logic tests easily and well. For example, S.35, comprehension age 144 months, was a low scorer on the logic tests, but S.26, comprehension age 90 months, was a high scorer. The same applied to IQ. S.7 had an IQ above the scale on Raven's Brown Matrices, yet was in the lowest third of scorers on the logic tests. So was S.1 when IR items were excluded and no less than four who scored "above the scale" on R.P.M. were among the average scorers in logic. In the "control" group one of the high scorers in logic had an IQ (R.P.M.) of only 75.

Such apparent anomalies could perhaps explain the inconsistencies of the previous analysis and it seemed worth while investigating the possible effect of a different grouping of scores.

The second analysis

The original scores of the VISUAL + IR test (before any teaching) were grouped according to failure or success in this test. Three groups were identified—high, average and low scorers. For the originally low scorers, a comparison was made between the gains of the "taught" group (i.e. those who had teaching by indirect means of games of beads and counters) and the "control" group in the VISUAL + IR test.

The gains of the average scorers in this test were also analysed. This procedure was followed for the other versions of the logic test, i.e. VISUAL - IR, VERBAL + IR, and VERBAL - IR.

TABLE V

ANALYSIS OF VARIANCE OF GAINS MADE BY CHILDREN WHO MADE THE LOWEST INITIAL SCORES ON THE LOGIC TEST

SUMMARY OF TREATMENT EFFECTS

	<i>T.G.</i>	<i>C.G.</i>	<i>F</i>	<i>P</i>	
VIS + IR	211	116	5.52	.05	Significant
VIS - IR	165	95	4.44	.05	Significant
VERB + IR	136	73	7.1	.025	Significant
VERB - IR	118	61	6	.025	Significant

In the groups of children who, originally, had difficulty in the logic tests, it will be seen that in the VISUAL tests the group of children which had logic games improved considerably more than the control group, whether the irrelevancies were included or not. It is also evident that in the VERBAL tests, the experimental group made significant and consistent gains, in comparison with the control group.

TABLE VI

ANALYSIS OF VARIANCE OF GAINS MADE BY CHILDREN WHO MADE AVERAGE (MIDDLE THIRD) SCORES INITIALLY ON THE LOGIC TESTS

SUMMARY OF TREATMENT EFFECTS

	<i>T.G.</i>	<i>C.G.</i>	<i>F</i>	<i>P</i>	
VIS + IR	128	58	4.5	.05	Significant
VIS - IR	37	21	.3	N.S.	
VERB + IR	44	24	.5	N.S.	
VERB - IR	40	13	1.4	N.S.	

It can be seen that statistically significant gains were made only in the VISUAL test when irrelevancies were included, when the analysis was confined to children making average scores originally.

5. CONCLUSIONS

This was a teaching experiment with only 77 children, and all deductions must be made with this in mind. It might be inferred that where children are failing in logical constructions and deductions, they would benefit from "planned intervention"—that is to say structured teaching in some form.

Since Raven's Matrices did not divide off those responsive to help it should not be concluded that if a child has a high IQ he does not

need help in logic—and this applies to high scores in comprehension also. Several other points of importance to the educator are suggested by this experiment. There is a need for increased awareness of some children's limited understanding of some phrases in daily use—phrases such as “only”, “any”, “whether”.

Judicious teaching, with careful analysis of processes of thought, can, it seems fair to conclude, carry over its influence from one form of experience to another, associated experience. The games with beads and counters took a very different form from the VISUAL and VERBAL logic tests, yet these games had a significant effect upon the performance of those children who found difficulty in the logic tests.

The transference of modes of thought from a “game” to direct test questions is self-evident.

In particular, some logic could indeed be taught to these eight-year-old children—indeed, even the practising without teaching had considerable effect, but the children who were originally failing in the tests, and then had teaching by the games, were able to improve their performance significantly. Therefore children who are failing in logic could be helped.

One last comment should be added, that the gains of the control group were not inconsiderable and they emphasise the fact that anything new or taught in a fresh way brings returns of renewed interest and improved attitudes and attainment.

Finally, if thought is internalised action, concrete experience in this experiment has aided thought.

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BOOK NOTICES

MRS M. L. J. ABERCROMBIE, SUSAN HURST and PETER STRINGER, *Selection and Academic Performance of Students in a University School of Architecture* (Society for Research into Higher Education, November 1969, 27s. 6d.)

To anyone looking for the traditional "single-shot" prophecy of who will succeed in Higher Education, the Bartlett's Survey of Selection and performance of architects offers very little comfort. Yet, it is, to my mind, a necessary exercise which should be read by many people in Higher Education who are now frantically searching for the new grids of selection in order to regulate the pressures for academic places. The most vital components of Bartlett's exercise are, I feel, its thoroughness and its scope which, not unlike algebra in mathematics, makes things more complicated in order to make them more simple.

And, if my enthusiasm about the didactic value of Bartlett's report carries a too severe connotation of fretfulness which might prevail in high places of educational planning, let me reduce the emotional content of such an inference by saying that the report may also be regarded as a necessary lesson in pedagogical humility—vis-à-vis the uniqueness and, therefore, the unpredictability of the individual—a lesson of how to tolerate the inevitable changes in the contemporary educational kaleidoscope.

For the report, based on rigorous and painstaking analysis, shows quite clearly that even with a reasonably constant climate of teaching environment, the predictive values of all selection criteria vary dramatically from year to year, from cohort to cohort, from subject to subject and from exam to exam.

The form of the report is rigorously statistical and will probably offend many lay readers but there is a very comprehensive discussion and summary which, if read first, will no doubt induce curiosity to look up the relevant sections and tables in the text.

The criteria for the selection procedures are very adequately described, carefully analysed and tabulated. It is refreshing to find that the main weight on the scales of achievement falls squarely on the candidates themselves. Their motivation (expressed in statements about interests, activities and reasons for choosing architecture) together with their academic records offers the best combination of criteria for success in studies.

The report throws up many lighter but no less important, side effects. One of them is a curious relationship between "Intelligence", "Impulsivity", "Liking for seclusion" and an "Interest in children

candidates for architecture scoring high on "Intelligence" are, apparently, more impulsive and have less liking for seclusion as well as being less interested in children!!

The relationship between assessments of the personality traits of the interviewers and of the candidates themselves is also explored. This is a very necessary control as the possibility of the interviewers selecting people like themselves cannot be disregarded. The evidence shows that, at Bartlett, this is not the case.

It is equally interesting to note that the candidates who were offered places at Bartlett scored high on "creative interests" and "femininity" and low on "conservatism", "authoritarianism" and "attention to detail". An immediate question which enters one's mind would be: Should not the personality traits of architects be included in the calculations of the safety factors of tall buildings? (Ronan Point and Kidderminster flats!)

Finally, if further encouragement is needed to stimulate the reading of this excellent report, let me make another point. Table 46, which gives an overall picture of correlations of all predictors with the performance of students, would form a most useful basis for a day seminar for the admission tutors. The main points for discussion: "The scope of variability, the magnitude and the usefulness of admission criteria."

One small drawback of the report is neither technical nor textual but editorial. This neat and well-designed little book fell virtually to pieces in my hands by the time I had finished my second reading. Some simple stapling device would save the readers a great deal of trouble.

There seems to be a misprint in the value of chi-squared on page 83, Table 4, under Table 34.

Mrs Abercrombie, Susan Hunt and Peter Stringer have presented all those concerned with the problems of Higher Education with a most useful résumé of their inquiries and should, I feel, be offered congratulations as well as best wishes for the continuation of their work. The Overhulme Trust which made this project possible must be offered my sincere thanks.

J. A. WANKOWSKI

CHARLEY, BOTT, DAVIES, GLYNNE-JONES, HITCHFIELD, JOHNSON, TAM-BURRINI, *Fundamentals in the First School* (Blackwell, 1969, 27s.)

Fundamentals in the First School is a most welcome addition to the literature available to the teachers and prospective teachers of young children. The book is a valuable contribution to filling the long-felt gap between psychological and philosophical works on the one hand and expositions of desired practice on the other.

Miss Brearley and her co-writers take as their starting-point the nature of the child's development to the age of nine, the contribution that school should be expected to make in broad terms and the considerations upon which that contribution should be based. Thereafter the thread of the book

is skilfully woven back and forth between theoretical knowledge of child development, analysis of the major curriculum fields and examples of practice deemed by the writers to best foster development in those fields.

The major part of the book is concerned with tracing the connexions between theory and practice in the fields of science, art, literature, movement, mathematics, music and of moral development. In each of these fields the approach is to blend discussion of the specific potential value of experience in that field with that of the nature and structure of the discipline itself to which the child will be later introduced. This is an excellent aid to perceiving the transition between child-centred interest based learning and later more subject-based learning. The writers' exposition of the use and purposes of children's experimentation, discovery and practice in terms of their present development and subsequent learning provides the teacher with a very useful reference for interpreting and guiding children's work. The intricate connexion between thought and language in all learning and the teacher's fostering and stimulative role in this is stressed throughout.

The writers are frank about their stand-point and attitudes to the education of young children and within this context provide a most welcome academic argument. The argument is necessarily condensed which makes some of it less accessible to the less widely read reader. Used as a core book in Colleges of Education with more extensive reading ranging around it, it would make a distinctive addition to the education of teachers.

PAT ASHTON

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The *Educational Review* publishes three times a year general articles and accounts of research of interest to teachers, to lecturers, to research workers in education and educational psychology and to students of education. Articles dealing with research, with descriptions of experimental work in schools, with critical reviews of teaching methods or curricular content in schools will receive special consideration. In addition, the Editors will accept from time to time articles on administrative problems, on tests and measurement, on child growth and development and on the relation of schools to the community.

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SCHOOL OF EDUCATION
UNIVERSITY OF BIRMINGHAM

TEACHING TO AND TEACHING THAT

by B. L. CURTIS

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I. INTRODUCTION

THIS discussion will be mainly concerned with some of the connexions and differences between *teaching someone to* and *teaching him that*, a distinction I shall try to make clearer when I come to it. First, however, I want to say a little about philosophy of education in general. It has been fashionable to talk of philosophy as being entirely a matter of "clarifying concepts and arguments". This "clarification" has sometimes taken the form of pointing out certain kinds of confusions in claims and arguments, and philosophy of education has sometimes been taken to be a matter of pointing out such confusions in claims and arguments about education. However, it is very difficult to say in general terms just what kind of clarification of what particular sort of confusion has been considered to be the proper concern of philosophy, and it is easier at the outset to offer an illustration. To choose a well-known example from philosophy of education: it has often been pointed out that it would be a confusion to suppose that education consists largely of conditioning pupils. That it is a confusion to suppose so can be shown (it has been said) by unfolding in increasing detail what is meant by the existing standard senses of the terms "education" and "conditioning"; when we consider these in detail it becomes clear that "conditioning" means something like "bringing about automatic responses in someone which are in no way the result of his rational choices", and "educating" means "helping someone to develop the capacity for rational choice". Thus, using the ordinary senses of "education" and "conditioning", we can see that there is at least a case for demanding how we propose achieving the former by means of the latter, since the two seem incompatible. Perhaps a more cautious way of making the original complaint would be as follows: it is a confusion to suppose that education is largely a matter of conditioning if we are using these terms in the senses just

outlined, that is, if we are using them with the meanings they seem generally to be taken to have.

We can see the need for this sort of clarification and we can see the point of calling it "clarification". Moreover, the possibilities for such confusions, and the need to be explicit and yet to economise in means, are features of our ordinary everyday discourse (and not just of some special thing called "philosophy"). To try to be clear about claims in this way is an important part of making such claims in the first place. Thus, if Brown says to Green that education is largely a matter of conditioning, Green would think it plain commonsense to make sure how Brown is using these terms. And if Green maintains that education is largely a matter of helping someone to develop a capacity for rational choice then it would seem (perhaps a little less plain) commonsense for Brown to demand in his turn whether Green is saying that this is what education is generally taken to be, or that it is what education *should be*. And so on. It is important to notice that we are concerned here not so much with the question of whether conditioning does or does not *in fact* help someone to develop a capacity for rational choice, nor even with the question of whether education is *in fact* a matter of developing such a capacity, but rather with the question of whether if we are using "education" and "conditioning" in the way suggested we can consistently claim education to be largely a matter of conditioning. This is not to belittle the importance of properly conducted inquiries into the facts, of course, but merely to point out that we are concerned here with a sort of "clarification" that is an important preliminary to and accompaniment of such inquiries. (An obvious and much-tried subject for clarification is the notion of rational choice.)

If this sort of clarification is a feature of our ordinary discourse in the way suggested, does that mean that most of us do philosophy much of the time without realising it? If not, at what point do we stop exercising ordinary, everyday discretion in such matters and start doing philosophy? In answer to this, I shall offer here only the much simplified suggestion that we are not seriously involved in philosophy until we are considering the relations between concepts at a most general level. Thus, in one discussion in which the previous example occurs it is claimed that "moral policies cannot be extracted from definitions and conceptual analyses" (Peters, 1966, p. 36) and to offer detailed justifications for such general claims as that is the kind of thing that philosophy attempts to do. Of course, "clarifications" of the sort being discussed here are indispensable parts of and steps on

the way to wider analyses, but it is only when they are so approached, as parts of a wider analysis, that they start to become philosophical. Philosophers and others who have claimed that all that philosophy can ever hope to do is to offer piecemeal "clarifications" have thereby been making a very general claim which (paradoxically) would itself need justifying if it is to be philosophical. (Justification usually takes the form of criticising rival general claims.) Philosophy of Education may well consist of "clarifications" of claims and arguments about education, but it only becomes *philosophy* of education because these "clarifications" are carried out as part of, or in the light of, a wider analysis. This is not to say that such "clarifications" aren't useful by themselves anyway. Also, of course, there is another, different, important pedagogical reason for undertaking such piecemeal "clarifications": they are valuable as an introduction to philosophy of education, particularly in the context of a limited course. It is with these points in mind that the following discussion of the connexions between teaching to and teaching that was undertaken.

2. TEACHING TO AND TEACHING THAT

(a) *Some different kinds of learning*

There has been a good deal of useful reference made in recent years to the differences between *learning-that*, *learning-how-to*, and *learning-to*, and much discussion of the related distinction between *knowing-that* and *knowing-how-to*. For example, differences have been pointed out between:

learning that —in the sense of acquiring information, or coming to know or believe;

learning how to—in the sense of learning that something is done in such and such a way, and perhaps learning to say how it is done;

learning how to—in the sense of acquiring the ability to actually do whatever it is;

learning to —synonymous with the previous learning how to in the sense of acquiring the ability to actually do whatever it is;

learning to —in the sense of not only acquiring the ability to do something, but acquiring also the inclination, tendency, or settled disposition to do it.

It seems clear that knowing how to do something in the sense of being able to do it and knowing how to do it in the sense of being able to say how it is done are often very different affairs, and one could be good at either without being good at the other. This is particularly noticeable where the activity concerned is "mainly physical". Thus one can easily imagine someone good at running, swimming, cooking, carpentry or cricket, for example, who is more or less inarticulate when it comes to saying how he does it, or saying what he does. For example, we can easily imagine a woman who is a good cook but who would need to use ingredients and utensils and actually bake a cake in order to explain how it is done, and who would for various reasons be more or less incapable of putting it all into words. Nor is this difference confined to such "mainly physical" activities. It finds its most general expression I suppose in the difference between being able to follow a rule and being able to state it. Certainly we often encounter a similar gap between being able to do and being able to say how or what one does in such various activities as doing sums, for example, or writing poetry or writing after-dinner speeches, or just in language-use generally. Not all good poets have been good critics. To glance at the other side of this coin: to be bad at doing something doesn't necessarily mean being bad at saying how it is done. Many a poor poet has been a good critic. Mediocre performers often make good coaches, and many a fine judge of football and keen connoisseur of the game has been unable to play. One can often teach others to do what one cannot (or will not) do oneself.

The relevance of all this for education seems plain. To have learnt how to in the sense of learning that something is done in a certain way is not the same as learning how to in the sense of learning to actually do whatever it is. To put it roughly: to have understood the instructions is one thing, to have mastered the activity is quite another. The issue is further complicated if we consider the important difference between being good at doing something in the sense of being able to do it, and being good at doing it in the sense of being reliably inclined to do it (as one might in this latter way be good at being punctual, clean, etc.). Thoroughly acquainting herself with the contents of Mrs Beeton does not make a woman a good housewife. In order to learn to be a good housewife she needs not only to master some skills and activities (as well as understanding the instructions and advice) but also to develop certain attitudes, habits, tendencies, dispositions, etc.; that is, she must become good at doing some things in the sense of being reliably inclined to do them. Of course, it might well be

thought that she could master the requisite skills and develop the approved attitudes and habits and so on without having had recourse to any advice or guidance whatsoever.

There seem to be these two importantly different senses of "learning how to do something": on the one hand there is "learning how to do something" in the sense of becoming proficient at doing it, and on the other hand there is "learning how to do something" in the sense of becoming able to judge a performance and perhaps guide others by pointing out their mistakes, and so on, but without being proficient oneself at doing it. These two ways of learning-how seem relatively independent at least to the extent that one can learn (and even become good at) either without learning or becoming good at the other. In a similar way there are two importantly different senses of "learning to do something": there is becoming able to perform and there is becoming able and dependably or predictably inclined to perform. These are independent to the extent that one can learn to in the sense of becoming able to perform without at the same time learning to in the sense of developing an inclination or tendency to (just as one could learn to swim and yet at the same time develop a firm dislike of swimming and resolve never to enter the water again).

(b) *Some different teaching objectives*

These distinctions seem relevant when it comes to deciding just what it is one is setting out to teach. However, in spite of these differences, when we come to consider teaching objectives in detail we find that in many (most?) cases the learning we are hoping to bring about, even where it is *learning to do* (in either of the senses distinguished) still involves a great deal of *learning that*, and *teaching to* involves a great deal of *teaching that*.

To start with a case of teaching a fairly simple physical activity, consider the case of teaching a child to hop. (Not all children find it equally easy to hop at the same age and some have to make quite an effort to learn.) Consider some of the different things we might try to do in different situations:

(a) Without bothering to let him see anyone hop, and without any attempt to explain what is wanted, we could try to develop techniques for getting *his body* to move in the required way.

(b) Again without example or explanation we could try to develop techniques for getting *him* to move his body in the required way.

(c) By means of example (demonstrating oneself and pointing to other children hopping) and by encouraging correct attempts and

signalling mistakes, but again without using language, we could encourage him to deliberately do what he grasps we want him to do.

(d) Again by means of example, encouragement and correction, we could encourage him to do what he grasps we want him to do but this time using words, so that he also grasps that we call it "hopping".

No doubt there are other variants, and there may well be good reasons for refusing to call some of these "teaching". Also no doubt hopping is one of those activities one could become proficient at without ever having had exemplification or advice from others in any shape or form. However, the four possibilities listed do seem to be significantly different things to be trying to get someone to do. For example, as teachers we would need to face the question of whether we are trying merely to get the boy's body to move in a certain way (whether that would satisfy us), or whether we are trying to get him to knowingly move his body in the way we are suggesting. If the latter is aimed at then at the very least it would appear that we are trying to get him to *know that* he is doing something the teacher wants him to (be able to) do. To teach him that it is also called "hopping" would be an additional piece of "knowing-that". In short, if we set out to teach the pupils to knowingly and deliberately do something, even a fairly simple "physical" thing such as hopping or swimming, then there are concomitant bits of *knowing-that* that we are trying to impart. How we set out to impart bits of knowing-that, and how we satisfy ourselves that we have imparted them, are matters I shall not attempt to consider in detail here. A point of particular interest concerns the part language plays in this business of imparting knowing-that. (We may well find that we would need to define "language" in terms of "imparting knowing-that".) Obviously we can teach a boy to hop without a word being spoken, and certainly without using the word "hop", though in such a case we would need to be cautious when making our claim that we had taught him knowingly to hop not to give the impression that we are claiming that he knows it is "hopping".

To pursue this particular point a little further, consider teaching a boy to hop *gracefully*. This seems clearly to be a simple extension of the previous example, and all that was said there about hopping can be said almost without change about hopping gracefully. Thus we could, for instance, try merely to get the boy's body to move in a way we would call "hopping gracefully", or we could try to get *him* to move his body in a way we would call "hopping gracefully", and so on. If it were the latter we were interested in doing, then just as we can imagine encouraging and helping a child to hop by showing him and by cor-

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recting his mistakes, without a word being spoken, so it would seem a natural continuation of this to get him to hop gracefully. Having once got him to hop we can, using the same methods, continue to refine our demands, so to speak, or we can continue to encourage his obvious interest in improving his performance, as the case may be. The question is: having got him to hop in a way we would call graceful have we thereby got him to hop gracefully *knowingly*? It seems a little out of the way to talk of teaching small boys to hop gracefully and so to make the example more realistic I shall consider teaching an older girl to walk gracefully. We face the same questions, of course, about what it is we are getting her to do. In particular, we face the question of whether having got her to walk in way we would call graceful we have thereby got her to *walk gracefully knowingly*. When we talk of teaching a girl to walk gracefully, do we mean merely getting her body to move in a certain way, or do we mean getting her to walk knowingly in the way the teacher suggests and which unknown to her is called "graceful", or do we mean getting her deliberately to walk in a way she knows that other people would think graceful? Perhaps we could have any of these "teaching objectives" in different situations, but if we have the third one in mind could we teach her to walk in a way that she knows other people would think graceful without at the same time teaching her (to use) the word "graceful", if she doesn't already know it? (Later, I shall take a brief look at some rather different cases of what might be called "the adverbial content of actions".) It is a quite separate point, of course, that even if she could act in a way she knew others would think graceful without actually knowing the word "graceful", knowing the word might make it a whole lot easier for her, and it might make it much easier to teach her to be graceful, to say nothing of the way knowing the word opens up general possibilities of talking with others about gracefulness.

To turn to an example of an activity which in a way is more complex than hopping, or walking gracefully, consider teaching a boy to play cricket. Where we are concerned with such things as getting a boy to hold a bat, or to hold it firmly, correctly, etc., or getting him to drive the ball, or drive it "fluidly", or forcefully, or gracefully, etc., it seems clear that what has just been said about getting someone to hop, or to walk gracefully, can be said with changes about all these "basic skills" of cricket, as we might call them. In each case the teacher faces questions about whether he is merely trying to get the boy's body to move in a certain way, for example, or whether he is trying to get the boy knowingly to make certain moves approved by

the teacher, or whether he is trying to get the boy deliberately to move in a way he knows for himself others would think graceful, forceful, "fluid", etc. In particular, of course, he faces the question of whether he is trying to teach the boy deliberately to make moves that he (the boy) knows that others would think useful, appropriate, exciting, etc., *moves in the game*. There is, no doubt, a whole continuum of such possible teaching objectives, different ones being suitable for different situations. We may well feel, however, that we have not taught a boy to play cricket (and cannot really teach him to play even a single cricket stroke properly) without teaching him to try to score runs and defend his wicket knowing (for himself) how these are part of the game. That is, until we have taught him in some degree to conform deliberately and knowingly with the rules and conventions of the game, and perhaps until we have taught him in some degree to involve himself knowingly in the manoeuvres and ploys in the spirit of the game. Teaching the boy to play a cricket stroke in this way involves a great deal of *teaching-that*.

In teaching a girl to walk gracefully there is, I have suggested, a difference between teaching her to walk in a way that unknown to her other would think graceful, and teaching her to walk in a way that she knows others would think graceful. There is I think a comparable difference between teaching a boy to make a certain movement with a bat which unknown to him would be thought a useful cricket stroke, and teaching him to knowingly make such a stroke. Similar distinctions can be made in many other things we teach children to do. For example, in teaching a boy to plane and saw and cut woodwork joints there may well be situations in which it is appropriate to devote effort simply to getting his body to move in a certain way. (We might be willing to call even this "teaching" where it is part of a general programme with wider aims.) Also, we can teach a boy to cut certain shapes, or teach him to become adept at making certain kinds of cuts, without his knowing, or knowing very much about, what they are for. We can, and often do, get the pupil repetitively to practise some basic skill or technique the usefulness of which the teacher knows from experience, but this is not because the teaching objective is to produce quite mindless mechanical movements, but rather to give the pupil greater control over what he can knowingly choose to do. The "mindless" cutting of those shapes we call woodwork joints and the "mindful" cutting of such joints are two very different things to do (although we call them both "cutting woodwork joints") and two very different things to try to teach someone to do. To teach a boy to

knowingly cut a woodwork joint involves making a start on acquainting him with some generally accepted beliefs and standards, it involves a good deal of *teaching-that*. How one sets about that difficult task and in what ways it involves language I shall not pursue in detail here. We can imagine teaching many activities in woodwork rather in the same way as we can teach a boy to hop: by example, encouragement and correction, without a word being spoken, but still, of course, depending on establishing communication so that he knows what we want him to do. However, just as there seems to be a puzzle about teaching a girl to walk in a way she knows that others would think graceful without teaching her the word "graceful" (if she doesn't already know it), so there would seem to be similar puzzles about teaching someone to produce what he knows would be thought of as an appropriate joint, a fine finish, elegant proportions in woodwork, without using the ordinary words for these.

Similar questions arise in connexion with other things we teach children to do: for example, cooking, dancing and playing the piano. To put it in general terms, doing "x" is not necessarily the same as (and is very often a quite different matter from) doing what one knows will be taken as "x". Strictly speaking, of course, this should be modified to something like "doing what one *reasonably believes* would be taken as 'x'"). Thus, learning to do "x" is often quite different from learning to do what one reasonably believes would be taken as "x"; and teaching someone to "x" is often a quite different matter from teaching him to do what he reasonably believes would be taken as "x".

3. THE ADVERBIAL CONTENT OF ACTIONS

I said that I would return to the question of what I called "the adverbial content of actions", and I particularly want to mention those adverbs which refer to the agent's attitude towards the effect of his action on others. For example, consider teaching someone to act kindly. I suggest that we in fact begin teaching a child to act kindly by teaching him (getting him to perform) what for the sake of brevity I shall call "basic skills" of kind behaviour, and that we in fact make a start on this by example, encouragement and correction, in a way not entirely unlike the way in which we make a start on teaching him to play cricket by getting him to hold the bat roughly correctly (as we think) and swing at the ball, say. Thus we might proceed with our endeavours by getting him not to "hog" the cake but to share it with others present, or getting him not to hurt his little sister. Having

succeeded in getting him to do this with some dependability we might claim to have made a start on getting him to act kindly, even though we had merely taught him to do what he so far knew only as something his teacher approved of. But there is more to teaching kindness than that, of course, just as there is more to teaching someone to move gracefully than teaching him to move in a way which unknown to him others would think graceful. Teaching someone to act kindly involves teaching him to do what he reasonably believes (or knows for himself) that others would think kindly done. And one of the lessons he would eventually have to learn, of course, is that others tend to distinguish between doing something kindly and doing it because one had been ordered to, or doing it so as to win approval. Anyway, it would seem to be an important part of acting kindly that one had gone to some trouble to consider how others would regard what one was doing, and all this would involve a great deal of *learning-that*; and teaching someone by example, encouragement, correction and explanation to act kindly would involve or assume a great deal of *teaching-that*. Similar remarks can be made about teaching someone to cheat, for example. If we teach a boy to copy answers from his neighbours without teaching him how this would be generally regarded, have we thereby taught him to cheat? Perhaps we might want to say that we have because of the start we have made, and because of how near what he is doing comes to cheating, but teaching him to do this is significantly different from teaching him to cheat knowing for himself how others regard it. The point, again, is that teaching him the latter would seem to involve so much more *teaching-that*, so much more of teaching him about beliefs, customs, standards, and so on.

4. TEACHING TO AND TEACHING THAT IN PHILOSOPHY

To turn finally to a rather different example of the way in which *learning to* do might be contrasted with *learning that*, I should like to consider briefly the distinction which one sometimes hears being made between *learning to do* philosophy and *learning about* philosophy.

Compare "You shouldn't teach pupils philosophy, you should teach them to *do* philosophy," with "You shouldn't teach pupils prayers, you should teach them to *pray*." We can teach a parrot the Lord's Prayer by getting it to make certain noises reasonably correctly; we can teach a non-Greek-speaking person the Lord's Prayer in Greek, so that he doesn't know what he is saying; we can teach a child to say the Lord's Prayer "parrot-fashion", not bothering with anything except getting him "word-perfect"; or we can teach someone

the Lord's Prayer in such a way that he knows at least to some extent what it means to say "Our Father, Who Art in heaven . . .". What we are going to count as teaching the Lord's Prayer depends on the circumstances (on the age of the pupil, for example), but I would suggest that only in a seriously impoverished way can we teach someone a prayer without teaching him *how to pray* (that is, without teaching *to pray*, in case he should want to). Just as one cannot teach someone a promise (or a vow) without teaching him that to say "I promise . . ." is in certain circumstances to commit himself, so perhaps one cannot teach someone a prayer without teaching him that to say "I pray . . ." (or "Our Father . . .") in certain circumstances is to commit himself (which involves teaching him what it commits him to). In short, in an important way teaching someone a prayer means teaching him *to pray*. (At least, it does "in the end".)

Similarly, we can teach a parrot to intone passages from Plato by getting it to make the appropriate noises; or we can teach these passages in Greek to a non-Greek-speaker; or we can teach someone some Plato "parrot-fashion"; or we can teach him some Plato in such a way that to some extent he knows what it means to ask (for example) "What is Knowledge? Can we answer that question?" (Plato: *Theaetetus*, 146; transl. B. Jowett). In between teaching passages parrot-fashion and getting someone to some extent not only to understand Plato's arguments but to find them compelling no doubt lies a range of possible teaching objectives, and what we are going to count as teaching some Plato will depend on the circumstances. But it would seem to be a seriously impoverished sort of teaching of philosophy which didn't involve teaching the student to do some philosophy in the sense of requiring him to begin thinking about certain problems in a certain way.

We aren't in the least bit tempted to say that we have taught the parrot *to pray* when we have "taught it the prayer". And when we have taught a non-Greek-speaking person to recite in Greek what unknown to him is a prayer, we are not tempted to say that we have thereby taught him to pray. At least, if we were, this would obviously be a very different sense of "pray" and a very different thing to teach him to do than teaching him, say, about communion with God. Moreover, it might be claimed that communion with God especially involves having other people very much in mind, it involves in a special way not just thinking about oneself but caring about others, which involves *knowing* about others. At any rate, when one sets oneself up to teach someone to pray one faces these challenges about just

what it is one has taught them to do, and one might be challenged that it is something like the above that one should be teaching them to do, since you claim to be teaching them to pray. Even if one teaches children that prayer is empty, or that prayer is "not for me", one faces similar challenges about just what it is one is teaching them is empty, or is "not for me". Setting oneself up to teach is a very ambitious project! Whether one sets out to teach children to pray, or not to pray, or to decide for themselves about praying, it seems that one faces the need to teach a great deal about what others *think that* praying is.

In a similar way, if we teach someone some Plato "parrot-fashion", not bothering about anything more than getting him "word-perfect", we are not I think tempted to say that he has thereby been taught to do some philosophy. At least, if we were so tempted, this would be a very different sense of "doing philosophy" and a very different thing to teach him to do than, say, teaching him to think about certain problems in a certain way. Moreover, it might be claimed that in order to teach someone to do philosophy one must teach him to think about such problems and in such a way that he reasonably believes others would regard as doing philosophy. At any rate, if you set out to teach someone to do philosophy (or to teach them not to do it) you face the challenge that it is something like this latter that you should be teaching them to do, or not to do, and this would involve a good deal of teaching about what others *think that* doing philosophy is.

5. CONCLUSION

In summary: to be able to say how something is done, to be able to actually do it, and to be reliably inclined to do it are often three different things to set out to teach someone. Nevertheless, we should not confuse these differences with the difference between *teaching-to* and *teaching-that*. A great many of the things we try to teach, particularly in formal education, whether we are teaching to talk about or to do, or teaching attitudes or habits, all necessarily involve a great deal of *teaching-that*. Most (if not all) of the things we try to teach a pupil to do involve teaching him how others would regard what he is doing; that is, they involve a great deal of *teaching-that* concerning general beliefs, conventions, standards, and so on. Even in the case of teaching a child to be punctual, for example, we face the question of whether we are just trying to get him to turn up on time fairly regularly, or whether we are trying to get him (in the end) to turn up on time having formed some beliefs of his own about the rightness of doing so, con-

sidering how his actions affect and would be regarded by others. Similarly, teaching someone about the philosophising or praying of others would seem to be a central part of teaching him to do philosophy or to pray.

It was suggested in the opening section that "clarifications" of claims and arguments in education only become *philosophy* of education when they are carried out as part of, or in the light of, a wider analysis. The (partial) "clarification" of learning and teaching claims which has been attempted here was undertaken within the context of the wider philosophical problem of how knowledge is involved in so much of what we do (and in so much of what we want to teach children to do). This in turn is part of the philosophical problem of knowledge ("What is Knowledge . . . ?"). And to talk this way of "the philosophical problem of knowledge" is to talk, of course, about what has been carried on that is called "philosophy".

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THE INFLUENCE OF PUPIL PARTICIPATION ON LEARNING FROM EDUCATIONAL TV: AN EXPERIMENT IN METHODOLOGY OF PROGRAMME PRESENTATION

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ABSTRACT

A TV programme was shown in secondary schools with two forms of pupil participation—workbook participation and oral participation. Pre- and post-tests were administered. There was no significant difference between the control group and that participating by workbook, but a 5 per cent significant gain over the control group by the group participating orally: the influence of the teacher may be important here.

I. INTRODUCTION

ALTHOUGH there is a growing volume of research into the effect on learning of educational television, only a limited number of studies have been directed specifically towards investigating the effects of variations in the methods of presenting programme material. In a recent review of such research Greenhill (1967, p. 14) laments,

One disappointing aspect of the research on instructional television over the past decade is the relatively small number of studies that have dealt with production variables or variation in methods of organising and presenting the programme content.

Of the problems confronting research in the presentation variables field, perhaps the greatest is the problem of working with previously produced programmes. Cooper et al. (1966, p. 42) emphasise this difficulty in their report on investigations into the influence on learning gains and attitude change of a series of broadcasts for schools on *The History of the U.S.A.*,

... the programme material and the conditions under which it is used are outside the control of the investigators. In addition the complexity of the

material makes it impossible to assess the contribution made by any part of the programme or by any method of presentation to the effectiveness of the film or broadcast as a whole.

Clearly, if investigation into the methods of presenting materials by television is to be meaningful it is necessary for the researcher to use prepared materials, where the factors being examined can be experimentally manipulated (using control and experimental versions of programmes) and in a situation where other presentation factors, which could contribute towards the results, are carefully controlled.

The most valuable work on presentation variables have come from centres of closed-circuit television production. Two groups of studies, particularly appropriate to this present experiment, may be cited. Kemelfield's work at Leeds illustrates the type of research likely to be of most value to educational television producers. The emphasis of this research has been laid on the examination of the effect of controlled variations in the selection and structuring of auditory and visual elements of presentation upon learning (Kemelfield, 1969). The second group of studies comes from the U.S.A. and concerns the work of Gropper and his associates on the influence of viewer participation on learning from television programmes. This latter work has concentrated upon the role of active viewer response to televised programmed-learning science lessons. The importance of Gropper's work lies in the replication of experimental studies yielding similar results—that active, overt responses enhance learning from educational television programmes (Gropper, 1961a, 1961b, 1963, 1965).

The application of viewer participation techniques to learning from televised instruction is the subject of this experimental study. In particular the investigation seeks to answer two questions: (i) In non-programmed-learning situations, is viewer participation more useful than others? (ii) If so, are some types of viewer participation more useful than others? The limited amount of experimental work conducted so far suggests two promising types of viewer participation—pupil-centred, self-paced written response, on the one hand, and instructor/pupil-centred, oral discussion type response, on the other. These two modes of participation were developed for use in this experiment. The former was organised as a sequence of written questions and answers given at regular intervals throughout a television programme. The questions concerned the fundamental ideas given in the programme. Each question asked referred to visual material supplied to the pupil. After each question the correct answer was supplied on the reverse side of the question paper. The whole sequence of questions, feed-

back answers and visual material was contained in a booklet. This participation type will be referred to from here on as *workbook participation*. The second response type involved the posing of a sequence of questions by a classroom teacher at regular intervals throughout a television programme. The questions mirrored those asked in the workbook situation. Visual material was similarly supplied in booklet form. In each response situation the question was held open until a correct answer was given by a pupil, failing which the classroom teacher supplied the correct answer. This participation type will be referred to as *oral participation*.

The specific experimental hypotheses were:

- (1) Those pupils who try to give written answers to *workbook* questions at regular intervals throughout a television programme will learn more about the fundamental ideas in the programme than pupils who merely watch the programme.
- (2) Those pupils who try to reply to questions *asked by a teacher* at regular intervals throughout a television programme will learn more about the fundamental ideas in the programme than pupils who merely watch the programme.
- (3) Those pupils who try to reply to questions *asked by a teacher* at regular intervals throughout a television programme, will learn more about the fundamental ideas in the programme than pupils who merely give written answers to *workbook* questions.

2. PREPARATION OF MATERIALS FOR THE EXPERIMENTAL TELEVISION PROGRAMME

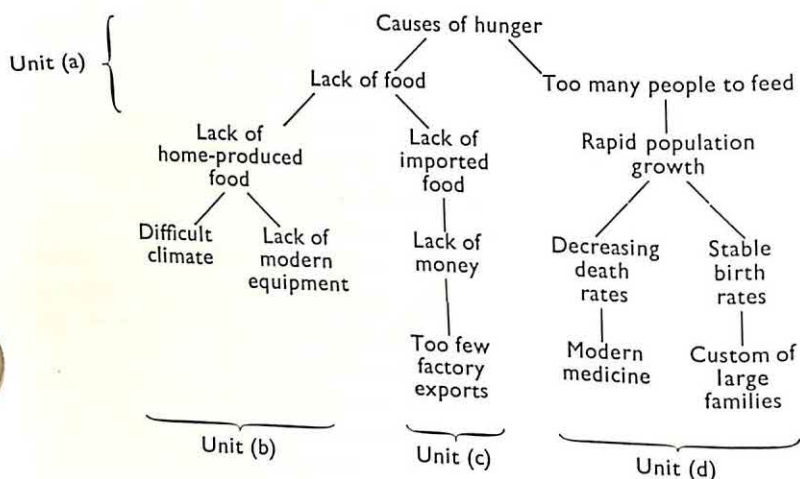
The topic selected for the television programme was world poverty and hunger. The programme was entitled *A World of Hunger*. The preparation of the experimental programme package involved three stages of work. First, the fundamental ideas in the television programme content were developed. Second, these ideas were organised into a television programme. Third, the participation activities were integrated into the television presentations. These stages of work typify the sort of control over content and presentation required for experimental purposes.

The informational framework on which the scripting of the television programme was based is shown in the diagram on p. 100.

The central concept, Unit (a), is defined as "The world distribution of hunger results from too many people and too little food." The three succeeding units of the script, (b), (c) and (d), each explain one lower-order concept of the "population: food supply" problem. Each

A WORLD OF HUNGER

PROGRAMME CONTENT STRUCTURE



of these secondary concepts is supported by a hierarchy of attributes. For example, "lack of food" may be attributed, on the one hand, to "lack of home-produced food", which in turn may be attributed to "poor climatic conditions" and/or to "lack of modern equipment" (Unit (b)). On the other hand it can be attributed to "lack of imported food", resulting from "lack of money" to purchase from abroad because of a low level of industrialisation—"too few factory exports" (Unit (c)). In each case the attributes are supported by specific instances.

The careful structuring of the informational content in the script allows for explicit definition of learning aims. Equally, the television presentation of these aims requires close attention to be paid to the communication structure. If the learner is required to handle complex sequences of information in both auditory and visual modalities simultaneously, unless the information in both can be readily related to yield a single meaning, the pupil's attention may be divided and competition between both modalities may impair his understanding. An example of the way in which complementary auditory and visual information was used in the experimental programme can be seen in the abstract of the script which follows. This abstract is taken from Unit (b) and explains the lack of modern equipment characteristic of farmers in the hungry world. Each instance of the attribute "lack of

modern equipment" is presented in visual and auditory form. While the visual information is being shown each verbal cue relates specifically to one particular visual stimulus. Similarly, the visual information remains on the screen until the verbal cues have been completed.

ABSTRACT OF UNIT (B) OF PROGRAMME SCRIPT

	<i>Frame</i>	<i>Visual</i>	<i>Verbal</i>
19	Camera 3	Presenter	Even where the land can be cultivated, the methods of farming are often very inefficient.
20	Camera 1	Caption: BULLOCK PLOUGH	Here is one example. A small plough drawn by animals. See how the dry, hard land is barely scratched by the plough! This man can count himself lucky.
21	Telecine	Slide: HOE CULTIVATION	In many parts of the world the task of breaking the soil is done by hand. These are the sort of back-breaking methods which many farmers have to use. With such methods the land will never produce enough food to feed the people.
22	Camera 2	Caption: TRACTOR PLOUGH	If only they had a tractor! But tractors cost money. This farmer is lucky. Most farmers have tractors only in their dreams.

A further consideration in structuring information in a communication system is the need to aid retention by the learner of material which contributes towards his understanding of the fundamental ideas being transmitted. Miller (1968, pp. 3-6) explains,

Since our capacity to remember limits our intelligence, we should try to organise material to make the most efficient use of the memory available to us. . . . Rehearsal or repetition has the very important effect of organising many separate items into a single unit, thus reducing the load our memory must carry and leaving us free for further thinking.

The experimental television programme sought to aid the learners' retention of the central concept, "too many people for too little food", by recapping a visual cue (film clip) at the close of each unit of the programme. Similarly, each secondary concept was repeated verbally at the beginning of each succeeding unit of the television presentation.

The third stage of the organisation of the experimental television programme involved the integration of the pupil participation tech-

niques within the presentation structure. The questions asked in both the *workbook* and *oral participation* modes were designed to reinforce the learning of the fundamental ideas contained in the programme. These ideas are the four concepts corresponding to Units (a), (b), (c) and (d) (see diagram). Just as the television programme sought to explain these ideas in terms of attributes and instances, so the participation questions sought to reach these concepts in precisely the same way. For example, the question relating to Unit (b) (concept = "lack of modern equipment") asked, "In what way does the equipment used by farmers in the hungry countries differ from that used in the rich countries?" In both the *workbook* and *oral participation* situations the pupils were again shown the visual cues of bullock plough, hoe cultivation and tractor plough. After answering the question the correct feedback answer was either shown (*workbook*) or spoken (*oral*). Between each unit of the programme such a participation period was inserted. In order to accommodate this each unit was self-sufficient and the programme was stopped after each unit presentation to allow the pupils' activity to take place.

3. THE EXPERIMENTAL PROCEDURE

Two co-educational secondary schools were selected for the experiment on the basis of the academic abilities of their fourth-year (14 years +) pupils. In one school the pupils were originally eleven plus failures and were not expected to tackle a full range of G.C.E. examinations (non-academic). In the second school pupils were expected to sit a full range of G.C.E. examinations (academic).

From each school three viewing pupil groups were formed. Allocation of pupils to groups was randomised. In each of the two schools one group fulfilled the role of the non-participating *control* group, one group acted as the *workbook participation* group, and one as the *oral participation* group. Each group consisted of 18 pupils with a randomised number of boys and girls.

Before the pupil groups viewed any version of the television presentations a comprehension pre-test was administered. This consisted of a series of questions which were specifically related to the learning objectives of the programme content. However, all questions were so phrased that if a pupil had the background knowledge to answer a question correctly he/she was able to do so.

Within each school all pupil groups viewed the programme presentations under precisely the same viewing conditions. All realistic precautions were taken to avoid contact between groups which had

already viewed a presentation and groups which were to view. The programme was transmitted to the television screen by video-tape recorder (VTR).

Prior to viewing, the *control* group at each school was given a brief explanatory introduction to the programme. The VTR was activated and the programme was viewed from beginning to end with no intervening breaks. This presentation lasted for approximately 25 minutes.

The members of the *workbook participation* groups at each school were given a similar pre-viewing introductory explanation as well as instructions on the use of the workbooks. The VTR was activated and the first unit of the programme shown. The VTR was then stopped and the pupils completed the first part of the workbook exercise. After verification of their answers the pupils then viewed the second unit of the programme, followed by the second part of the workbook task. All four units of the programme, with intervening workbook activities, were administered in the same way. This presentation lasted for approximately 35 minutes.

As well as a pre-viewing explanation of the programme, members of the *oral participation* groups were given an explanation of the role of the classroom teacher and of the use of the visual material in the booklet. The units of the programme were presented in precisely the same way as in the workbook version. At the close of each unit of the programme the pupils were asked to examine the visual material. The classroom teacher (at both schools the same person and not a member of either school's teaching staff) then led a question and answer type discussion, encouraging the pupils to make discriminatory responses about and between visuals presented in the booklet. These questions were exactly the same as those presented in written form to the workbook groups. The visuals presented were also the same for the two participation groups. The difference between the two methods of participation was that in the oral situation wrong answers could be discussed and explanations given as to why they were wrong, neither of which were possible under workbook conditions. This presentation lasted for approximately 40 minutes.

Immediately following each complete programme presentation, the learner groups were given a written post-test. The pupils remained in their viewing seats and were given between 10 and 15 minutes to complete the test. The post-test asked the same questions as were posed in the pre-test. However, while the pre-test questions were phrased to elicit the correct answers from the pupil's background knowledge, the post-test questions were designed to elicit the correct

answers from knowledge gained specifically through viewing one of the television presentations.

The method of assessment of the pupils' answers in both the pre-test and the post-test was determined by the aim of these tests, which was to assess the degree of understanding of the fundamental ideas (concepts) concerning the causes of world hunger. Thus marks were awarded for completely correct answers only. In all difficult cases the marks to be awarded were discussed with two other research workers in order to avoid unconscious bias on the part of the principal investigator.

4. THE EXPERIMENTAL RESULTS

An analysis of covariance was performed on the post-test scores. The results of this analysis are shown in the following table. These results show that there was a difference in learning gains at the one per cent level between schools, indicating the significantly greater ability of the academic school pupils to handle the programme content than the non-academic under any presentation condition.

Variation in learning gains between presentation versions showed a difference at the five per cent level of significance in both schools. A Newman-Keuls test showed that this difference was between the *oral participation* version and the control version. There was no significant difference between the *workbook participation* version and either the oral or control versions. There was no interaction between schools and method of presentation.

ANALYSIS OF COVARIANCE OF POST-TEST SCORES

Source of variation	Degrees of freedom	Sum of squares	Mean square	f
Between schools	1	70.7	70.7	22.2**
Between presentation versions	2	25.8	12.9	4.1*
Between schools \times presentation versions	2	2.8	1.4	0.4
Residual	101	321.3	3.2	n.s.

** p less than 0.001
 * p less than 0.05

5. CONCLUSIONS

In relation to the original experimental hypotheses, three conclusions may be drawn:

- (1) There is no evidence that active *workbook participation* increases learning gains significantly over non-participation.
- (2) An increase in learning gains was recorded at the five per cent level of significance by *oral participation* groups over non-participation groups in both schools.
- (3) There is no evidence that *oral participation* increases learning gains over *workbook participation*.

The significantly better performance of pupils who viewed the *oral participation* version over that of the non-participation groups suggests that the influence of the teacher as an explainer of difficult concepts may have been a key factor. The ability of the teacher to adapt the discussion, allowing the pupils to hear more answers or misconceptions corrected, is likely to have reinforced the learning of the fundamental ideas in the programme. This type of participation is also likely to increase motivation as a result of answering aloud in class. Further, since the presenter of the television programme conducted the class oral discussions, the arousal of interest may have been easier to achieve.

There is substantial evidence from previous experimental work that pupil participation is an aid to learning from instructional television and film. This present experiment suggests the need for future investigation into the relative advantages of different types of pupil participation.

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EDUCATIONAL SYSTEMS AND CURRICULA FOR EDUCATIONALLY SUBNORMAL PUPILS IN SPECIAL SCHOOLS AND SPECIAL CLASSES OF ORDINARY SCHOOLS

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1. INTRODUCTION

MANY educational authorities in England have two forms of educational provision for educationally subnormal pupils. Such pupils, when ascertained and placed, may be found in special schools or in special classes of ordinary schools. Both forms of provision, by the fact of their special creation, recognise the need for some modification in the curriculum of the normal school before it can be made suitable for ESN pupils. What then, apart from the setting of these provisions, are the differences between their curricula? The main aim of the curriculum is promotion of learning by provision of learning experience (Taylor, 1967). Schools differ in their concept of what should be included in the school curriculum. In some schools it is no longer possible to draw "dividing lines between what belongs to, and what falls outside, the curriculum" (Owen, 1969). The head teachers of English schools have an important role in determining what should be included in the curriculum of their schools and they have no wish to relinquish this responsibility (Westwood, 1966). Thus in order to investigate the educational systems and curricula for ESN pupils in a large county in the north of England, headteachers were the logical source of information. So much has been written about the approach to ESN pupils (Tansely and Gulliford, 1960; Kirk, 1961; Tizard, 1964; and Cashdan, 1969); and their need for permissive, creative, and unregimented atmosphere (O'Connor and Tizard, 1956; Hulme and Lunzer, 1966; Cashdan and Stevens, 1966). There is however hardly any empirical investigation

of what actually goes on in Special classes or Special Schools for the ESN. This investigation is an attempt to fill that gap.

2. THE HEAD TEACHERS IN THE SURVEY

Questionnaires were taken by the investigator to 100 head teachers in the county. The head teachers are distributed as follows:

- 20 head teachers of 20 mixed special schools for educationally subnormal pupils. Of these 16 are males, 4 are females.
- 40 head teachers of ordinary junior mixed schools with special classes for ESN pupils. 32 are males, 8 females.
- 40 head teachers of ordinary mixed secondary modern schools with special classes for ESN pupils. All 40 head teachers are males.

The 20 special schools' head teachers included in this study constitute the heads of all the special schools in the county with provisions for children aged 8-16. The 40 junior schools with special classes and the 40 secondary modern schools with special classes were however drawn from ten education divisions out of all the education divisions in the county. The ten education divisions were selected by random methods. Each of the selected divisions has a special school. It also has at least six junior schools with special classes, and at least six secondary modern schools with special classes. Each special class caters for ESN pupils in the ordinary school, but not exclusively for such pupils. From the list of schools with special classes in each of the ten divisions previously selected, four junior and four secondary modern schools were selected by random methods again. Each junior school with special classes has at least 300 pupils on its roll. Each secondary modern school with special classes has at least 400 pupils on its roll. Each special school has 120-180.

Thus we have 40 junior schools with special classes and 40 secondary modern schools selected by random methods from ten education divisions which were selected by random methods. The physical difficulty of covering a large county area necessitated the limiting of the survey to ten divisions, especially in view of the method by which responses to the questionnaire were collected (see next section).

In spite of the randomisation achieved, the fact that the survey did not cover a wider area may set some limitations to the degree of generalisation possible. It may be the case that the ten education

divisions are not in fact completely representative of all the education divisions in the country. However, as far as it can be ascertained, the same county policy in education operates for all the education divisions in the county. Official county policy apart, it must be admitted that the county is large enough to accommodate local diversities. A remarkable advantage of limiting the survey to schools in ten education divisions is evident in the fact that 100% response was achieved in this survey.

3. INFORMATION SOUGHT IN THE HEAD TEACHERS' QUESTIONNAIRE

In order to obtain as comprehensive as possible a picture of the educational systems existing for ESN pupils the following information was sought from the head teachers:

1. The form of educational provision for ESN pupils in the schools
2. Organisation of the school
 - (i) Staff organisation
 - (ii) Pupils' organisation
3. Classroom setting
4. Discipline
 - (i) General attitude to discipline
 - (ii) Attitude to punishment
 - (iii) Attitude to praise
5. The nature of the authority of the head teacher
6. Teaching methods advocated
7. Curriculum and basic subjects
 - (i) Social lessons
 - (ii) Special curriculum for the last year at school
 - (iii) Real-life activity subjects
 - (iv) Subjects included in the curriculum
8. Places school organises visits to
9. Contact with outsiders
 - (i) Meeting with other schools
 - (ii) Visitors, guest speakers
10. Health and family education programme.
11. Programme for transition from school to work
12. Training for citizenship
13. Training for leisure activities
14. Contact with ex-pupils
15. Relationships between the school and the parents

16. Aims of education for children with IQ of 50-75 and for the school in general
17. Purposes of extra-curricular activities
18. The sort of occupation children with IQ 70-75 will be suitable for

4. RESULTS OF ANALYSIS OF HEAD TEACHERS' QUESTIONNAIRE

Here, comparisons will be made between the special school catering for ages 7-16 and junior schools with special classes catering for ages 7-11 on the one hand, and between the former and secondary modern schools catering for ages 11+ to 16 on the other. In view of the small number of female head teachers their responses are not analysed separately.

ORGANISATION

(a) *Staff*

The special schools for ESN pupils in this study appear to be more adequately staffed than junior schools with special classes for ESN pupils. They also compare well with secondary modern schools with similar provisions. 14 of the 20 special schools have teachers in graded posts as compared with 10 of the 40 junior schools. All the 40 secondary modern schools, however, have such teachers. Similarly all 40 secondary modern schools have specialist teachers compared with 85% of special schools and 12½% of junior schools. 90% of special schools and 62·5 % of secondary modern schools have career masters or mistresses who could advise school leavers. All the special schools have not more than 20 pupils per teacher. Only 17 out of 40 junior schools and 24 out of 40 secondary modern schools have a teacher-pupil ratio of 1 in 20 for their ESN pupils. The difference between the special schools and each of the junior schools and secondary modern schools in this respect is significant, chi-square being 16·296 and 8·960 respectively, $p = 0\cdot01$ at 1 d.f.

(b) *Pupils in positions of responsibility*

The 20 special schools are like the 40 junior and 40 secondary modern schools in two respects. All the head teachers of these schools indicated that responsibility is shared amongst their ESN pupils, and amongst pupils in the last year of school. Unlike any of the special and junior schools, all 40 secondary modern schools indicated that

they also have school prefects. The 20 special schools and the 40 secondary modern schools have head boys and head girls. All the junior and secondary modern schools have class monitors. 25 secondary modern schools have houses and house leaders. It appears then that the three types of schools in this investigation are comparable on this point. They all permit shared responsibility among all their pupils, and according to their circumstances they all have pupil leaders who have special responsibilities apart from those shared by all pupils.

(c) *Classroom setting*

There appear to be two ways by which children in special schools in this study are arranged in their classes. (1) Classroom arrangements are informal, that is children do not sit in rows of desks facing the teacher; instead they move their desks round according to the particular activity they are engaged in and according to the position of the class-mate with whom they are participating. Children's informal arrangement often developed into activity groups. (2) Children sit where they like. All the 20 special schools indicated these two points as against $47\frac{1}{2}\%$ of junior schools and $12\frac{1}{2}\%$ of secondary schools, who showed that they allow informal grouping, and 55% of junior schools and 35% of secondary schools, who allowed their ESN pupils to allocate themselves freely to their seats. ESN pupils in these special schools appear to be less restricted than ESN pupils in ordinary junior and secondary modern schools whose classroom settings tend to be more like those for children of normal intelligence.

(d) *Discipline*

When head teachers were asked to describe their attitude towards discipline, 100% of special schools, 85% of junior schools and 75% of secondary modern schools' head teachers expressed views that may be taken as showing that they have liberal or tolerant attitudes towards discipline. These are examples of their answers to the question.

How would you briefly describe your attitude towards discipline?

Special schools:

1. "A great deal of tolerance"
2. "Sympathy and understanding"
3. "Permissive, with certain standards"
4. "Informal and liberal, few rigid rules"

5. "Free, within a structured framework. The rights and desires of others must be considered. That which is permissible for one may not be permissible for another"
6. "A belief that good example (by staff) is all important"
7. "Personal well being, no negative rules"
8. "That of a conscientious parent, friendly, relaxed, but consistent"
9. "Helping the school population to see the need for discipline"
10. "Happy activity with good personal relations"

Junior schools:

1. "Cheerful co-operation"
2. "Kindly but firm"
3. "Free, training in sense of responsibility"
4. "Goodwill"
5. "Friendly, firm and fair"

Secondary modern schools:

1. "Generally, quite liberal"
2. "Developing self-discipline in a happy atmosphere"
3. "The Divine Plan. Freedom to choose between good and evil"
4. "Personal and kindly"
5. "Great tolerance"

When asked what their aims for school discipline are, 100% of the special schools said "self discipline", as compared to 70% of junior schools and 80% of secondary modern schools. In addition, whereas all the special school head teachers said they were satisfied without qualifications that their aims have been realised, 75% of both the junior and secondary modern schools gave similar response. Table I below shows chi-square values for these responses.

To the question "When punishment is given, what form does it take?" 80% of junior schools and 70% of secondary modern schools mentioned corporal punishment. None of the special schools did (chi-square = 31.147 and 21.33 respectively and is significant, $p = 0.01$). 100% of both secondary, modern and junior schools' as well as 70% of special schools' head teachers said they use withdrawal of privileges as a form of punishment. Whereas all the head teachers of special schools mentioned restitution as a form of punish-

TABLE I

COMPARISON OF HEAD TEACHERS' ATTITUDES TO DISCIPLINE

<i>Responses</i>	<i>School</i>	<i>No. of H.T.</i>	<i>%</i>	<i>Chi-square value</i>	<i>Level of significance</i>
Attitude is liberal	Special	20	100	1.875	Not significant
	Junior	34	85		
	Special	20	100	4.335	0.05
	Secondary	30	75		
Aim is self-discipline	Special	20	100	5.742	0.05
	Junior	28	70		
	Special	20	100	3.047	Not significant
	Secondary	32	80		
Unqualified satisfaction that aims are realised	Special	20	100	4.335	0.05
	Junior	30	75		
	Special	20	100	4.335	0.05
	Secondary	30	75		

ment, only 47½% of secondary modern schools and none of the junior school heads mentioned it.

When reward is given, the main difference between the three types of schools appears to lie in the fact that special schools tend to use extra privileges and gifts as rewards. 80% of special schools added these to their forms of reward. 62.5% of secondary modern schools give house points as an incentive. Only 12.5% of junior schools and none of special schools appear to do so.

(e) *Authority of head teacher*

All the head teachers said that authority is sometimes shared by their teachers, and sometimes centralised in the office of head teachers. Teachers tend to be in full control while in charge of their classes; at the same time, the head teacher is responsible and ultimately answerable for what goes on in his school. 40% of junior schools' and 10% of secondary modern schools' head teachers, however, indicated that any responsibility their teachers might share with them came from them as directives to teachers. None of the special school head teachers said so.

(f) *General teacher method advocated*

All the head teachers in this investigation indicated that they do not advocate a formal or abstract approach to teaching the different subjects on the curriculum. They all preferred an informal and practical approach. However, 100% of special schools' head teachers indicated that they advocate a concrete approach compared to 77.5% of junior and 40% of secondary modern schools' head teachers who indicated this. The latter differ significantly from the special school head teachers on this point (chi-square = 17.578 and is significant at least at 0.01 level, one degree of freedom).

(g) *Curriculum and basic subjects. Social Training*

More head teachers of special schools indicate that they teach their pupils (1) table manners, (2) grooming, and (3) how to use public amenities than do head teachers of junior and special schools. Chi-square values are significant for each of these social skills when special schools are compared with secondary modern schools, but only for the last two social skills when special schools are compared with junior schools. (See Table II below.)

In the next set of results, comparison was made between the special schools and the secondary modern schools only because the data related mainly to last years at school. Thus whereas all the 20 special schools' head teachers say they have a special curriculum for the last years at school for their ESN pupils only 15 out of 40 secondary modern schools or 37.5% say so.

Similarly, in the content of such special curriculum for the final years, there are significant differences between the two types of schools. All the 20 special schools say their would-be school leavers go out shopping, learn to use the telephone, learn to use bus time-table, train time-table, and telephone directory. They learn to fill in forms at the Post Office, and the use of the Welfare Service. 18 out of the 20 said their pupils check in-coming supplies to the school. Against this, not more than 15% of the secondary modern schools' head teachers indicate doing any of the eight activities. Treating each activity independently, the difference between the two types of schools for each activity is significant at 0.01 level (chi-square at 1 d.f.).

In addition the 6 secondary schools' head teachers that give some of these activities only provide them in the last school year of the ESN pupils. Sixteen out of 20 special schools provide these activities for at least the last two years of their pupils' school career.

TABLE II

COMPARISON OF HEAD TEACHERS INDICATING THE
TEACHING OF SOME SOCIAL SKILLS

<i>Responses</i>	<i>School</i>	<i>No. of H.T.</i>	<i>%</i>	<i>Chi-square value</i>	<i>Level of significance (1 d.f.)</i>
Curriculum includes table manners	Special	16	80	3.182	Not significant
	Junior	21	52.5		
	Special	16	80	14.262	0.01
	Secondary	10	25		
Curriculum includes grooming	Special	18	90	14.071	0.01
	Junior	14	35		
	Special	18	90	11.615	0.01
	Secondary	16	40		
Curriculum includes use of public amenities	Special	20	100	27.075	0.01
	Junior	10	25		
	Special	20	100	15.081	0.01
	Secondary	18	45		

The last statement of result about curriculum refers to the fact that special schools have more unusual subjects (like those mentioned above) on their curriculum than either secondary modern or junior schools catering for ESN pupils, percentage calculations being 100%, 15% and 5% respectively. In fact 75% of the special schools indicated that they often do away with the three Rs and other basic subjects in favour of the more practical and real-life orientated activities.

(h) *Visits*

Responses indicated that ESN pupils in special schools have more opportunities to go on school-organised visits than do ESN pupils in junior and secondary modern schools. In considering visits to places where children may be eventually employed, and places of general industrial interest, comparison will be appropriate if made between the special schools and secondary modern schools. Only 90% of the former and 30% of the latter organise visits to places where their children may be employed (chi-square = 16.875; this is significant at 0.01 level, 1 d.f.,) All 20 special schools and 30 of the 40 secondary

modern schools' head teachers say they organise visits to places of general industrial interest ($\chi^2 = 4.335$, $p = 0.05$, d.f. = 1).

As for other visits organised by the schools, the junior schools do not compare favourably with the special schools. 25% of the Junior schools visit places of educational interest as against 100% of special schools. For visits organised to places of cultural interest, demonstrations, entertainments (theatre) and sports (ice rink, bowling alley etc.) the percentages are 40%, 15%, 20% and 25% respectively for junior schools, and 100%, 80%, 90% and 60% respectively for special schools. Each of these differences is significant at $p = 0.01$ or 0.05 , 1 d.f., using χ^2 . The percentages of secondary modern schools' head teachers who organise visits for the same four purposes are 100%, 30%, 52.5% and 80% respectively.

(i) *Contact with others*

The main avenues for meeting other schools are, for the three types of school, games, sports and social activities. 80% of special schools, 77.5% of junior and 100% of secondary modern schools respectively participated with other schools in games and sports. 20% of special schools, 5% of junior schools and 20% of secondary modern schools meet other schools for social activities. 75% of special schools, however, indicated an additional activity in the form of educational visits to other schools.

Schools also invite representatives of several services and other persons to visit and sometimes to speak to their pupils. Here, however, the main comparison appears to be between special schools and secondary modern schools because of the ages of the pupils to which such speeches are directed. Table III below shows how the two types of schools compare.

The special schools appear to have proportionally more visitors of all types than the secondary modern schools have. Also a greater proportion of special schools invite speakers to (1) describe the types of and conditions of work in jobs the pupils might want to do, (2) describe their own jobs, (3) talk about their hobbies, and (4) talk about travels, more than do secondary modern schools. The percentage calculations are 90%, 95%, 95%, and 90% respectively for special schools and 40%, 27.5%, 45% and 6% respectively for secondary modern schools. The difference between the two schools on each of the four issues is significant at 0.01 level, using χ^2 with 1 degree of freedom. In addition 90% of special schools as compared to

TABLE III

COMPARISON OF SCHOOLS INVITING VISITORS TO SPEAK TO ESN PUPILS
(AGED 14-16)

Type of Visitor	To special schools		To secondary modern schools		Chi-square value	Level of significance (1 d.f.)
	No. of Schools	%	No. of Schools	%		
Youth employment officer	19	95	32	80	1.324	Not significant
Police officers	20	100	16	40	17.578	0.01
Employers	16	80	17	42.5	6.136	0.05
School medical officers	16	80	21	52.5	3.182	Not significant
Ministers of religion	18	90	7	17.5	25.929	0.01
The forces	9	45	11	27.5	1.134	Not significant
Postman	12	60	8	20	7.884	0.01
Foreigners	12	60	1	2.5	22.696	0.01

5% of secondary modern schools regularly receive ex-pupils as visitors (chi-square is significant at least at 0.01 level).

(j) Health and family education

Most of the head teachers in each of the three types of schools indicated that they give extra training in personal hygiene. 90% of special schools give instruction in diet. 85% of secondary modern schools and 40% of special schools give extra instruction on smoking. As far as giving information on human reproduction, family planning, fathercraft and parenthood is concerned, the ESN school leavers in special schools appear to receive more information; 60%, 80%, 90% and 90% (respectively) of special schools' head teachers indicated that they provide information on these topics, as compared to 42.5% 5%, 35% and 5% (respectively) of secondary modern schools' head teachers. Both types of schools give information on marriage and mothercraft.

(k) Transition from school to work

When one looks at the specific aspects of work-life to which school leavers are introduced, it is again quite clear that special schools compare more favourably than secondary modern schools. Table IV which follows shows how the schools compare on each specific area of work.

TABLE IV

SPECIFIC ASPECTS OF WORK LIFE TO WHICH SCHOOL LEAVERS
ARE INTRODUCED

<i>Aspects of work covered</i>	<i>Special schools</i>		<i>Secondary modern schools</i>		<i>Chi-square value</i>	<i>Level of significance (1 d.f.)</i>
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>		
Employer-employee relation	14	70	24	60	0.224	Not significant
Sick-leave procedure	18	90	24	60	4.375	0.05
Time sheet	18	90	4	10	33.382	0.01
Wage slips	12	60	15	37.5	1.894	Not significant
National insurance	17	85	10	25	17.045	0.01
Private insurance	10	50	4	10	9.794	0.01
Clocking in and out	20	100	17	42.5	16.296	0.01
Taxes	20	100	36	90	—	—
Care of tools and equipment	20	100	40	100	—	—
Changing of jobs	20	100	25	62.5	8.100	0.01
Safety precautions	20	100	40	100	—	—
Doctor's panel, medical certificate	16	80	14	35	9.075	0.01
Sickness benefits	18	90	24	60	4.375	0.05

(l) Citizenship

A majority of both the special schools and the secondary modern schools give information to their pupils on savings banks, respect for people's property, and youth club activities. Larger percentages of head teachers of special schools than secondary modern schools' head teachers indicated that their pupils are informed about legal systems, personal budgeting, citizens' advice bureaux and welfare services. The percentages of head teachers of special schools mentioning these are 75%, 90%, 60% and 100% respectively. For the secondary modern school head teachers, the percentages are 10%, 52.5%, 22.5% and 42.5% respectively. Few head teachers from both types of school say they give information on voting procedure and local government. 75% of junior school headteachers give information on savings banks, 100% of them teach respect for people's property and 40% informed their pupils about budgeting.

(m) Leisure activities

A list of twelve leisure activities was presented to head teachers,

TABLE V

WAYS BY WHICH DIFFERENT TYPES OF SCHOOLS MAKE CONTACT WITH THEIR EX-PUPILS

<i>Ways of making contact with ex-pupils</i>	<i>School</i>	<i>No.</i>	<i>%</i>	<i>Chi-square value</i>	<i>Level of significance (1 d.f.)</i>
Through youth employment offices	Special	—	—	4.375	0.05
	Junior Special	18	90		
	Secondary	24	60		
Through employers	Special	—	—	12.568	0.01
	Junior Special	12	60		
	Secondary	5	12.5		
By direct contact with ex-pupils	Special	19	95	23.434	0.01
	Junior Special	10	25		
	Secondary	19	95		
By contact with their parents	Special	16	40	8.017	0.01
	Junior Special	15	37.5		
	Secondary	16	80		
By old pupils' visits	Special	11	55	11.459	0.01
	Junior Special	4	10		
	Secondary	11	55		
Open day	Special	9	22.5	4.959	0.05
	Junior Special	15	75		
	Secondary	16	40		
	Special	15	75	5.214	0.05
	Junior Special	16	40		
	Secondary	15	75		
	Secondary	24	60	0.742	Not significant

five—namely keeping pets, gardening, sport, games and music—were mentioned as encouraged by 50-70% of special schools' head teachers. Of the 40 head teachers of secondary modern school 47.5% encourage one leisure activity, namely stamp-collecting. Very few of special schools' and secondary modern schools' head teachers indicated that they provide facilities for the practice of the remaining leisure activities in their schools.

(n) Contact with ex-pupils

Table V below shows that most of the special schools make regular contacts with their ex-pupils. The proportions of secondary modern and junior schools' head teachers indicating several ways of making contact with their ex-pupils are significantly less than those of special schools.

(o) Relationship with parents

The most often used method of making contacts with parents of pupils and ex-pupils by the three types of schools is by parents making visits to school. All the 20 special schools' head teachers say they use this method. So did 80% of junior schools and 95% of secondary modern schools. One way in which the special schools differ from the other two types of schools is that 90% of them indicated that a parent-teacher association is an important way of making contact with parents compared with 40% of junior schools and 37.5% of secondary modern schools. The difference between the special schools and each of the other two types of school is significant at 0.01 level, chi-square being 11.615 and 12.803 (1 d.f.) respectively.

When they meet children's parents, the most often discussed points appear to be children's school progress and children's behaviour. At least 77.5% of head teachers from each type of school said this was the case. However 90% of special schools' and 60% of secondary modern schools' head teachers also indicated that they often discussed the occupational prospects of their ESN pupils with the parents. The chi-square value of 4.375 obtained shows that the two types of school differ significantly on this point ($p = 0.05$ at 1 degree of freedom).

(p) Aims of education for ESN children

The three types of head teachers were requested to state briefly what they considered to be the aim of education for children with IQ of 50-75. 40% of special schools', 62.5% of junior schools' and

52.5% of secondary modern schools' head teachers made statements implying that the aim should be for a liberal many-sided and balanced education. The following examples of their statements are to illustrate the point.

"Social competence"

"Liberal education"

"All-round personal development"

"Educate for life in all its aspects"

"Social adjustment"

"Personal happiness and full domestic life"

"Personal adequacy within the community"

"Self-confidence, enjoyment and satisfaction in what they do"

The remaining 60% of special schools', 37.5% of junior schools' and 47.5% of secondary modern schools' head teachers gave opinions suggesting vocational aims of education for their ESN pupils. Examples of their statements are:

"To make pupils achieve a level of skill to make them employable"

"Saleable skills"

"To be able to get a job at the end"

"Security"

"Settlement in world of work"

"To be able to gain profitable occupation"

"To make them able to live without others' support"

"Development of habits useful at work"

"Inculcate willingness to work, and earn a living"

"Worthwhile relationship with employers and workmates"

"To be able to hold down a repetitive job and to lead a settled life"

To examine the head teachers' aims of education for their pupils further, a list of 17 aims of education, designed to cover most areas of aims of education were presented to all the head teachers in the investigation. They were asked (a) to indicate the aims they think should be included and (b) the order of priority they would attach to the aims. Table VI gives a detailed result of the aims the head teachers thought are important. It will suffice to state here that most of the head teachers (at least 75%) from each of the three types of schools indicated that (1) ability to earn money, (2) organisation into community, (3) toleration of behaviour differences, (4) development of normal everyday relationship with others, (5) development of personal hygiene and health, are important aims of education for their ESN pupils. 11 out of 20 special schools', compared with 4 out of 40

junior and 6 out of 40 secondary modern schools' head teachers, also considered training in normal relationship with workmates to be an important aim of education for their pupils (chi-square values of 12.100 and 8.629 are significant at 0.01 level, 1 d.f.). Further, a larger proportion of special schools' head teachers (than the other two types) indicated that they consider (1) training in the role of a worker, (2) training in the use of public facilities, (3) development of healthy personal relationship, (4) ability to adapt to "special environment", (5) adaptation to own deficiency, as important aims of education. A larger proportion of secondary modern schools' head teachers (than the other two types) said that training in use of leisure skills, and appreciation of culture are important. A smaller proportion of junior schools' head teachers mentioned the development of normal reaction. Few head teachers from each of the three types of schools indicated that (1) training in family relationship, (2) sex development, and (3) training in the role of husband/wife and father/mother, are important aims of education for their pupils.

When one considers the order of priority head teachers gave the seventeen aims presented to them one finds that the first three priorities are the only ones ranked by a fairly large proportion of head teachers from each type of school. These are as follows: 95% of special schools' head teachers gave their first order of priority to development

TABLE VI

THREE RANK ORDERS GIVEN TO SOME AIMS OF EDUCATION BY HEAD TEACHERS OF SPECIAL, JUNIOR AND SECONDARY MODERN SCHOOLS

<i>Aims of education</i>	<i>Head teachers of:</i>					
	<i>Special school</i>		<i>Junior school</i>		<i>Secondary modern school</i>	
	<i>Order</i>	<i>%</i>	<i>Order</i>	<i>%</i>	<i>Order</i>	<i>%</i>
Development of normal everyday relationship with others	1	95	2	75		
Training in the role of a worker	2	80				
Ability to earn money	3	100			2	87.5
Development of normal reactions	—	—			1	70
Appreciation of culture	—	—			3	75
Tolerance of behaviour differences	—	—	1	70		
Development of personal hygiene and health	—	—	3	60		

of normal everyday relationship with others. 80% mentioned training in the role of a worker as next. Their third order of priority, as indicated by 100%, is ability to earn money. Of secondary modern schools' head teachers 70% gave their first order of priority to development of normal reactions. 87.5% gave ability to earn money as their second order of priority. The third priority was given to appreciation of culture by 75% of the head teachers. Junior schools' head teachers gave their first order of priority to toleration of behaviour differences—mentioned by 70%. 75% mentioned development of normal everyday relationship with others as their second priority. Development of personal hygiene and health was the third priority of 60% of them.

(q) *Purpose of extra-curricular activities*

From the list of eight purposes of extra-curricular activities presented to the head teachers for ranking, "To provide leisure time activities" was ranked first by every head teacher. Table VII shows the ranks given to each purpose by a majority of each type of school's head teachers.

TABLE VII
RANK ORDER OF SOME PURPOSES OF EXTRA-CURRICULAR
ACTIVITIES BY SPECIAL, JUNIOR AND SECONDARY
MODERN SCHOOL HEAD TEACHERS

<i>Purpose of extra-curricular activities</i>	<i>Rank order given by</i>		
	<i>Special school</i>	<i>Junior school</i>	<i>Secondary modern school</i>
To provide leisure-time activities	1	1	1
To facilitate the development of social skills	2	3	2
To promote physical skills	8	4	3
To provide experiences in avocational skills	4	7	6
To develop tension reducing activities	3	6	7
To promote development of motor skills	7	2	4
To promote functional skills	5	5	5
To provide a training for future occupation	6	8	8

(r) *Occupational prospects*

Finally, when asked to state what sort of occupation the head

teachers think pupils of IQ 50-75 are suitable for, the response was almost unanimous. 80% of special schools, 87.5% of junior schools and 95% of secondary modern schools said unskilled jobs. The rest mentioned semi-skilled jobs. All emphasise the role of workmates.

To summarise, compared with the two other type of schools, the special schools appear to be more adequately staffed, less rigid in classroom setting, more liberal in, and more satisfied with their discipline. The curriculum provided for the ESN pupils is more real-life orientated. They pay and receive more visits to and from other agencies. Their programme to smooth the transition from school to work appears to be more comprehensive and lasts for a longer period of time than those obtaining for ESN pupils in secondary modern schools. Head teachers of special schools also appear to possess educational aims for curricular and extra-curricular activities which tend to emphasise the future economic and social well-being of their pupils.

5. CONCLUSION

From the results above it may be concluded that special schools for ESN pupils provide a more adequate educational system and curriculum than do special classes for ESN pupils in ordinary schools. One important factor in the inadequacy of special class provision when compared with special schools' may be the need for ordinary schools with special classes to keep a uniform front in school policies. Much as a head teacher might agree with the system obtaining in the special schools, he would have to consider the implementation of such policies in the light of "equal treatment for all pupils". It is true that there are some allowances made for special schools and special classes to make the work of these forms of education more suitable for the ESN pupil. But whereas in the special school such allowance would wholeheartedly be devoted to its purpose, in the ordinary school it may be looked upon as part of a general allowance to the school; and the special class may have to compete with other priorities. This is also probably true in matters of staff-pupil ratio, discipline, freedom of expression, contact with the outside world and extra-curricular activities. The ESN pupil in the ordinary school is in the minority, and not only the headmaster but the staff and other pupils as well might have to be persuaded of the need for special treatment for them. The picture emerging from this investigation would suggest that until all schools are treated with the special generosity extended to the

special schools, the gap between the special schools and special classes in ordinary schools will remain open.

The democratic, permissive, free expression and real-life oriented approach and atmosphere of the special school appear to be in conformity with the approach advocated by the Clarkes (1965), by O'Connor and Tizard (1956), by Kirk (1961), by Kephart (1960), and by Tansely and Gulliford (1960). It is a complex problem deciding whether segregating ESN pupils from, or integrating them with, the non-ESN is the best in the long run. One significant conclusion of this investigation is that the educational system and curriculum available in a special school or a special class should be related to the psychological needs of the ESN pupil in making a decision where option exists. Special milieu, close contact with normals, slower pace of life, are some of the points often mentioned. These and the problems of rejection and stigma apart, the ESN pupils' need for experimentation, warmth and free expression must, wherever possible be provided for. Specialist training of head teachers is very important to ensure this.

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PERSONALITY, SPORTING INTEREST AND ACHIEVEMENT

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ABSTRACT

Research into the relationship between measures of personality (Eysenck and Cattell) and interest and performance in certain sporting activities is examined. There is some evidence of a relationship between high level performance and stable extravert personality and high dominance; and some evidence for the existence of "sporting types". The P.E. teacher probably differs in personality type from 70% of his students; it is important that a wide variety of sporting activities should be offered.

I. INTRODUCTION

THIS article examines research into the relationship between measures of personality, and interest and performance in certain sporting activities. Consideration is confined to work using personality tests established by H. J. Eysenck and by R. B. Cattell. Although other tests have been used, the majority of attempts to relate a measure of personality with sporting interests and achievements have utilised a questionnaire designed by one of these researchers.

Personality is defined by Cattell (1965) as "that which tells what a man will do when placed in a given situation". Allport (1937), defined personality as "what a man really is". In fact, defining personality is one of the many difficulties which have beset research workers in this field. Anastasi (1961) warned that "continuing development is hampered by special difficulties associated with the concept of personality. As a consequence the measurement of personality is to be regarded as tentative."

Despite this kind of reservation, personality testing became increasingly popular during the 1960s. In individual cases the results obtained from personality questionnaires can only be considered as starting-points for closer (sometimes clinical) study; but, used to find a picture of personality trait distribution within fairly large

groups, it is claimed they provide useful and fairly accurate information.

2. PERSONALITY TESTING

The work of both Eysenck and Cattell is based on a study of personality traits, for example, dominance, aggression etc. Whiting (1969) writes that a classification into traits is "devised to bring some form of order into the diverse acts of behaviour". Trait psychology has a considerable history and many works in common use describe behaviour in terms of different traits. Cattell reduced a list of approximately 4,500 "trait words" to about 170 by putting together those which most people would consider are synonymous—such as "worrying" and "anxious", "rigid" and "unbending" etc. He then arranged them in clusters of similar words and contrasted them with other clusters which appeared to be their polar opposites. Finally, by subjecting his work to a system factor analysis, he "discovered" the existence of 16 first-order factors; really clusters of traits and their polar opposites, joined to form a series of scales.

Eysenck (1964) says, "Traits are not observable; they are inferred (as any kind of determining tendency is inferred). Without such inference the stability and consistency of personal behaviour could not possibly be explained. Any specific action is the product of innumerable determinants not only of traits but of momentary pressures and specialised influences. But it is the repeated occurrence of actions having the same significance that makes necessary the postulation of traits as states of being. Traits are not at all times active but they are persistent even when they are latent. . . ."

Eysenck and Cattell differ in the emphasis which they place on personality factors—i.e. clusters of traits. Cattell uses a system of 16 first-order factors and where there is a correlation found between sets of these factors he generalises to a second-order level of "types". Cattell has arrived at two main second-order factors which he calls "extraversion" and "anxiety". Similarly Eysenck has picked out two major dimensions (types in Cattell's system) of "extraversion" and "neuroticism". Recently he has added a third major dimension—"psychoticism" (1968). There is considerable agreement between the two theorists on "extraversion" but their concepts of "neuroticism" and "anxiety" do not coincide so closely.

Whiting (1969) sums up the situation when he points out, ". . . It is largely a question of preference and utility whether a particular theorist concentrates on 'traits' or 'types'—on first-order or on second-

order factors. Eysenck puts emphasis on types and Cattell on traits. This does not mean that Eysenck ignores traits or Cattell types."

(i) *The tests*

All the tests mentioned attempt to measure personality objectively by using questionnaire techniques. Eysenck's main tests are the Maudsley Personality Inventory (M.P.I.) and the Eysenck Personality Inventory (E.P.I.). Both these have Junior versions (J.M.P.I. and J.E.P.I.). There is a recent revision of the E.P.I. which includes the extra major dimension of psychoticism. It is possible that this will prove to be an improvement in terms of reliability and validity on the E.P.I. as well as giving further information. Eysenck claims that with the E.P.I., using a test/retest reliability method, r equals 0.85 which is quite high for this type of measurement instrument.

Cattell's test is generally known as the 16 Personality Factor Test (16 P.F.).

(ii) *Methods of reporting results*

Both theorists talk in terms of continua and classify a person as being at a certain point on a continuum between polar extremes. Eysenck uses three axes which he claims are independent, i.e. it is not possible to predict a reading on one scale from knowledge of a score on another scale. Most of the work so far reported has been done with the M.P.I. and the E.P.I. and in both cases scores may be shown plotted on a two-dimensional model. By contrast, when recording results on the 16 P.F., "profiles" are often produced which show up marked differences extremely clearly. A series of profiles can be superimposed for direct comparison.

This is only a very brief description of general work concerned with defining and testing personality and a selection of the considerable writings of Eysenck and Cattell should be consulted for further information.

(iii) *Personality and sport*

The main purpose of this paper is to examine attempts to relate personality test results with aspects of sport. Many avenues of investigation are open. Flanagan (1951), for example, says, "Certainly to the physical educator it seems important to have some understanding of why some individuals prefer to respond to certain types of activities while other individuals may be reached by activities of quite different types." Initial interest in a sport, the learning of the skills

involved, amount of participation and achievement have all been studied. Occasionally some pattern has appeared in the results but in many cases insufficient research has been completed and the evidence at present is somewhat conflicting.

3. EXPERIMENTAL FINDINGS

(i) *Using Eysenck's tests*

In 1961 Stone found, after examining top English athletes with the M.P.I., that they were significantly more extraverted than the normal population and Whiting (1963) supports this by suggesting that, other things being equal, extraverts are more likely to "reach the top" in athletics. Dimsdale (1967) found that a small sample of athletes, representative of a wide range of ability in athletics (the sample included club and county athletes as well as junior and senior internationals), scored more highly than Eysenck's normal, English population on both the extraversion and neuroticism scales using the E.P.I.

However, it appears from work by Nias (1967) at Loughborough College of Education that most physical education students are quite highly extraverted—more so than the reported scores of the international athletes, so that whilst extraversion may be highly correlated with interest and participation, it may not be a vital factor in determining success at higher competitive levels. Brooke (1967) found average neuroticism and very high extraversion in 118 Loughborough P.E. students. Comparing their scores with Eysenck's normal population Nias says "we may conclude the average P.E. student is more extraverted than 70% of people in general". If true, this has considerable implications for the relationship between teachers of P.E. and their pupils and also between many coaches and their protégés.

Using the M.P.I., Knapp (1965) established that a sample of 46 top-class tennis players were more extraverted and less neurotic than a quota sample of 1,800 English normals but that the differences between the means were not significant. She concluded that "although there is a preponderance of individuals with extravert tendencies, there are also a considerable number of outstanding lawn tennis players who are introverted". Six of the forty-six were, in fact, more than one standard deviation from the norm towards the introversion end of the continuum.

Rasch and Mozee (1963) found (in spite of a quite common belief that many men who engage in weight-lifting and "body-building" do so for reasons connected with the possession of a certain personality

Other researchers have sought to examine performance in stressful situations. Brooke (1967) examined physical performance and pain perception without coming to definite conclusions but Costello and Eysenck (1961) demonstrated that the extravert has a marked superiority in pain tolerance and Whiting (1964) concludes that "the extravert would be able to express more of his strength where pain was a limiting factor". Cratty (1967) points out that "the personality of the performer also influences his susceptibility to the audience effect".

4. SUMMARY AND IMPLICATIONS

There has been considerable research in this field but more is needed before positive statements can be made. Confusion remains in a number of areas where conflicting results have been obtained.

There is some evidence of a relationship between a stable extravert personality and high-level performance in sport. High dominance appears to be an important factor in individual sporting achievements.

In view of the many exceptions that have been found it is vital that the teacher and/or coach should not treat all individuals included in activities alike but should make suitable adjustments in their approach to teaching and coaching individuals.

There is some evidence for the existence of certain "sporting types". Also certain activities appear more attractive to different personalities. For this reason a wide programme of differing activities should be offered in secondary schools to cater for this factor.

Personality factors are an important consideration where sportsmen or children are taking part in activities in a stressful situation, whether the stress be caused by physical danger or the presence of an audience.

Finally, the physical education teacher should realise that he is probably different in personality from approximately 70% of the children and other people he will meet in a normal cross-section of the community. What is sauce for the goose may not be sauce for the gander!

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SOME CHARACTERISTICS OF TEACHERS SUBMITTING SYLLABUSES UNDER MODE 3 OF THE CERTIFICATE OF SECONDARY EDUCATION IN THE NORTH-WEST

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ABSTRACT

Arising out of concern felt at the small number of teachers submitting syllabuses for examination under Mode 3 of the Certificate of Secondary Education in the area of the North-West Board, the research was designed to see if there were significant differences in experience, qualifications and attitudes towards examinations between teachers submitting Mode 3 syllabuses and those accepting the Board's Mode 1 syllabuses. The Mode 3 teacher will have some but not vast experience, have reached a graded post, be new to his school, have an individual viewpoint.

I. INTRODUCTION

THE Certificate of Secondary Education introduced three possibilities to teachers: an examination set in the traditional way upon a published syllabus, an examination set by the examining Board upon a syllabus devised by the teacher or an examination set by the teacher upon his own syllabus and moderated by the Board. The second option (known as Mode 2) has made little headway and is generally considered to be moribund. The third option (Mode 3) has been accepted in widely varying degree according to region. West Yorkshire and Lindsey in 1967 had 51% of its entries under this Mode. The North-Western Board had 0.3%. Nine of the fourteen Boards had less than 5% Mode 3 entries.

Clearly there are special regional factors influencing the acceptance of the Mode, factors such as ease of entry, official encouragement and publicity. At the same time, however, the decision as whether to submit a syllabus under Mode 3 rests with the individual teacher. It was to try to discover if there were measurable differences between the teachers who accepted the more traditional Mode 1 and those who

undertook responsibility for their own examination under Mode 3 that the present research was designed. It should be stressed that the results are obtained from teachers in the area of the North-Western Board only.

2. PROCEDURE

A questionnaire probing the experience, qualifications and attitudes towards external examinations of teachers was administered to teachers preparing their pupils for the C.S.E. Mode 1 and Mode 3 examinations. Thus in the first of these areas the questionnaire was intended to find out whether the Mode 3 teachers were, on average, younger and less experienced, or whether they tended to be "old hands". In the area of qualifications the proportions who were graduates or who had specialist qualifications in their teaching subject were sought, as well as the numbers holding posts of special responsibility. In the third area, that of attitudes, the teachers were asked who they thought were best to set and mark the C.S.E. examinations and what they considered to be the ideal moderating machinery.

All teachers in the area of the North-Western Secondary School Examinations Board who had submitted syllabuses in "conventional" subjects under Mode 3 were asked to complete the questionnaire. The restriction to conventional subjects was necessary since it is the opinions of teachers who had truly chosen to prepare their pupils for Mode 3 examining that were sought. Teachers preparing their pupils in "new" subjects (architecture, catering, drama, painting and decorating, for example) for which no Mode 1 examination was provided by the Board had no option. It is possible that many of these teachers would have preferred a Mode 1 examination, had it been available. In all there were thirty-two teachers submitting syllabuses in conventional subjects under Mode 3, and twenty-six (82%) of these answered the questionnaire.

The subjects for which syllabuses were submitted are listed below. The numbers in brackets show the number of syllabuses (if more than one) submitted for that subject.

Art and Craft
Engineering Science
English Language (3)
Geography (3)
History (8)
Physics
Rural Studies (2)

Chemistry (2)
Engineering Workshop
French (3)
Government & Citizenship (2)
Mathematics (3)
Religious Knowledge (2)

A control group was selected from those teachers who had accepted the Mode 1 syllabus of the North-Western Board. The group was made comparable with the Mode 3 group in two aspects, namely *type of school* (equal proportions of teachers from grammar, modern and comprehensive schools being selected) and *subject* offered. Subject to these restrictions a random group of fifty-two teachers was selected, twice as many as those submitting Mode 3 syllabuses. This means that each teacher in the Mode 3 group was paired with two Mode 1 teachers preparing pupils for the same examination subject in the same type of school. In all sixty-three Mode 1 teachers were used to answer the questionnaire, so the proportion replying (83%) was almost the same as that for the Mode 3 group. The numbers in each group from each type of school are shown in Table I.

TABLE I

BREAKDOWN OF GROUPS INTO TYPE OF SCHOOL

<i>Type of school</i>	<i>Mode 3 group</i>	<i>Mode 1 group</i>
Grammar	5	10
Modern	19	38
Comprehensive	2	4
Total	26	52

3. RESULTS

A. Experience

The questions in this section of the questionnaire asked the teachers to state the number of years they had been teaching, the number of years they had been teaching in their present school, and their position (assistant without graded post, assistant with graded post, head of department etc.) at the time of answering the questionnaire. The *total teaching experience* of the groups is shown in Table II. We see that half of the Mode 3 group have been teaching for between

TABLE II

TEACHING EXPERIENCE OF GROUPS

<i>Group</i>	<i>Years of teaching</i>			<i>Total</i>
	<i>Less than 5</i>	<i>5 to 10</i>	<i>More than 10</i>	
Mode 3	2	13	11	26
Mode 1	9	8	35	52

B. Qualifications

In this section of the questionnaire teachers were asked if they were graduates or had been trained in a college of education, and if they held specialist qualifications in the subject in which they were preparing pupils for the Certificate of Secondary Education. "Specialist qualifications" was deliberately left undefined, the object of the question being to see to what extent the different groups regarded themselves as specialist in their teaching subject. For each question a "yes" or "no" reply was required and the numbers answering "yes" are shown in Table V.

TABLE V
QUALIFICATIONS OF THE GROUP

Group	Trained at college of education	Graduate	"Specialist" in teaching subject
Mode 3	18	13	17
Mode 1	36	21	37

The proportions trained at a college of education turn out to be exactly the same. There are proportionately more graduates among the Mode 3 teachers (50% as against 40% of the Mode 1 group), though this difference is not statistically significant ($.50 < p$). A slightly greater proportion of Mode 1 teachers saw themselves as specialists in their teaching subject. This difference is, however, too small to be statistically significant ($.50 < p$).

C. Attitudes towards examinations

The attitudes of teachers towards the C.S.E. examinations were probed by asking, in the first place, who they thought best should set the examinations. Five options were provided, namely *experienced chief examiners, local consortia, elected teachers from the area, the pupils' class teacher* and *other*. The number selecting each option are set out in Table VI. As expected the Mode 3 group favoured the class teacher far more than the Mode 1 group, the difference being significant at the one per cent level ($t = 5.68$ for 76 degrees of freedom). Equally worthy of note, however, is the fact that more than a third of the Mode 3 teachers did *not* select the class teacher. The most frequently selected option of the Mode 1 teachers was the local consortia. That over 40% of the group chose this option is remarkable, especially as there has been little publicity for it in the North-West. Overall the difference in pattern between the groups is significant at the one per cent level.

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TABLE VI

SETTING C.S.E. EXAMINATIONS

Group	Chief examiners	Local consortia	Numbers selecting Teachers from area	Class teacher	Other	Total
Mode 3	3	3	2	17	1	26
Mode 1	10	23	16	3	0	52

For those considered best to *mark* the examinations, four options were provided, namely *conventional examiners*, *local consortia*, *the class teacher* and *other*, the frequencies being as shown in Table VII. Once again a marked and statistically significant divergence between the groups is evident ($\chi^2 = 12.74$ for 3 degrees of freedom). The most favoured option of the Mode 3 group was the class teacher—though more than a quarter of the group chose otherwise. The Mode group was quite evenly divided between the conventional examiner and the local constortia.

TABLE VII

MARKING C.S.E. EXAMINATIONS

Group	Conventional examiners	Local consortia	Numbers selecting Class teacher	Other	Total
Mode 3	5	2	18	1	26
Mode 1	26	22	4	0	52

The teacher groups were also asked what they considered to be the ideal moderating machinery, selected from: *visits to every school by a moderator*, *visits to a sample of schools by a moderator*, *moderation on the consortium principle*, *common examination paper externally moderated* and *other methods*. Most of Mode 3 selected the first of these as did nearly a quarter of the Mode 1 group. Moderator visits to a sample of schools only, on the other hand, received relatively small support from both groups alike. The most frequent choice of the Mode 1 group was moderation on the consortium principle (which

TABLE VIII

MODERATING MACHINERY

Group	Visits by Every school	Numbers selecting Moderator to Sample of schools	Consortium principle	Common exam.	Other	Total
Mode 3	16	3	6	1	0	26
Mode 1	12	6	20	13	1	52

also received appreciable support from the Mode 3 group) not, as might have been expected, the common examination paper. The frequencies are set out in Table VIII. The group differences are significant at the one per cent level ($\chi^2 = 10.41$ for 4 degrees of freedom).

4. CONCLUSION

The typical North-Western "Mode 3 Teacher" would not seem to differ from his colleagues in his qualifications. His degree of mobility is not unusual, but he is probably quite new in his school. He will have reached at least the status of a graded post. He will have spent sufficiently long in his profession not to be considered inexperienced, but will still be considered young if compared with his colleagues in the staff room, where he is most likely to be heard expressing an individual point of view when external examinations are being discussed.

The research also produced some unexpected by-products. The strongly-expressed preference for consortia methods, in an area where little propaganda has been carried out for them, is the most striking. It would seem to indicate that a large-scale inquiry into teachers', as opposed to teacher-organisations' wishes in the organisation of external examinations would be very worth while. Mode 1 teachers were asked if they had considered and rejected Mode 3. Lack of time for the extra work involved was the commonest reason given for rejection, followed by doubt about moderating methods and lack of examination experience. Inadequate payment does not seem to have been a major factor. 17 out of the 52 teachers said that they were thinking of submitting Mode 3 syllabuses in the future—and this represents one third of a random group, with obvious implications for the Board concerned.

Mode 3 teachers were asked if their decision to use Mode 3 had been influenced by any factors within the school. Ten said that the major influence had been the head teacher. It would seem that in Mode 3, as in so much else, the role of the Head is a vital one.

Finally there is much scope for further research into some of the topics outlined here. The mythical "Mode 3 teacher" which has been created is representative only of the North-West. The many special factors which affect the growth of Mode 3 in the different regions prevent a single pattern emerging. If we are to encourage the spread of teacher-responsibility in external examinations we must find out how Mode 3 is seen by the teacher who is using Mode 1 and what are

the influences which prevent him from accepting it. Deeper research on a co-ordinated basis is indicated and, if Mode 3 is to thrive and avoid the fate of Mode 2, this research should not be long delayed.

NOTES

(i) This article is a development of a dissertation submitted as a part of the requirements for the Diploma in the Advanced Study of Education at the University of Manchester.

(ii) I am greatly indebted to three sources of invaluable assistance. Dr D. G. Lewis, Lecturer in Methods of Educational Research at Manchester University, helped at every step, from the statistical interpretation to drafting the results. He modestly disclaims the joint-authorship which is due. The Secretariat of the North-Western Secondary Schools Examination Board provided access to records without which the research would have been impossible. The teachers, approached at a busy time of the year with yet one more questionnaire, responded in a way which can only prove the vast fund of goodwill which exists towards research concerned with practical educational topics.

EDUCATIONAL ATTITUDES OF SOME PRIMARY SCHOOL PRINCIPALS IN SINGAPORE

by LAU WAI HAR and SOH KAY CHENG
Research Unit, Teachers' Training College, Singapore

BACKGROUND

IN Singapore, there have been tremendous changes and developments in education in the last ten years. Change in education has been one of the most spectacular aspects of our nation-building. Difficulties in tackling quantity have been successfully overcome and now the whole emphasis is on the improvement of quality of education. Educational changes that have recently taken place include the emphasis on technical education, on science and mathematics and on second language teaching. Among teachers, there is an unprecedented eagerness for professional growth and improvement. A gigantic programme providing further training for qualified teachers has been launched. This includes an advanced professional course for primary school principals.

All these changes require adaptability on the part of school teachers and principals. The primary school principals occupy an intermediary position between the teachers and pupils on the one hand and education authorities and policy-makers on the other. They play an important role in our society of rapid change. It is the school principal who interprets and implements directives from the Ministry of Education. It is the school principal who is the leader in his school and who sets the pace for work in his school. He is also responsible for the atmosphere and social climate of the school, which might help or hinder the momentum of change.

In view of the particular stage of development we are in and of the key position our primary school principals hold in our system of education, the writers are of the opinion that it would be useful and interesting to find out the attitudes towards education among these school principals.

I. INTRODUCTION

Studies in educational attitudes involving primary school principals as subjects have been scanty. Moreover, studies of principals' educational attitudes have mainly concerned themselves with specific problems such as streaming vs. de-streaming (Pattinson, 1963; Jackson, 1964), and such studies are by nature more "educational" than "psychological".

The Advanced Professional Course for Primary School Principals conducted at the Teachers' Training College, Singapore, provided the writers with an opportunity of conducting two studies of school principals' attitudes. The present study, which was carried out in early 1969, is one of the two; the other is on the principals' opinions of characteristics and conditions of a good school.

The present study aims at gauging the educational attitudes of the primary school principals in respect of certain aspects of school life which the writers believe to be important. Since most of the existing scales for measuring educational attitude were designed for classroom teachers rather than school principals, it was decided that a new scale be constructed. This scale will be hereafter referred to as the EA Scale (Educational Attitude Scale).

In the process of the construction of the EA Scale, a number of the existing scales have been referred to. The Minnesota Teacher Attitude Inventory (Cook, 1951) concerns itself with the general teacher attitude. The Manchester Scale of Opinion about Education (Oliver and Butcher, 1962) yields three separate scores for its three sub-scales—idealism-naturalism, conservatism-radicalism, and tough-tender-mindedness. The NFER Scale of Teachers' Attitude (Tuppen, 1966) provides scores for six sub-scales dealing with permissiveness, attitude towards punishment, selection, noise in classroom, streaming, and children in A-stream. Ferron (1965) constructed a scale for measuring attitudes towards the modern approach in teaching; this scale deals with seven aspects of education, including methods and discipline.

The EA Scale

For the present study, forty statements (in the forms of descriptive statements and proverbs) were quoted or paraphrased from textbooks on education and educational psychology. After careful study, twenty of these were selected to form the EA Scale and were presented to the subjects as 5-point Likert-type scales. The categories

used in the EA-Scale are Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree. These items were sub-divided into four sub-scales, each dealing with one aspect of the school life, namely children, discipline, teaching methods and school administration. It yields five scores, one for each of the four sub-scales (C, D, M, and A), and one total score for the whole scale (EA). C stands for Children, D for Discipline, M for Method, and A for Administration.

The C Scale is meant to gauge the subjects' attitudes to children—whether the principals see children as sources of delights or troubles, whether they will tolerate children's natural behavioural characteristics. (Items 1 to 5.)

The D Scale is supposed to measure the subjects' attitudes concerning classroom discipline—whether the principals favour a autocratic, rigid, and punitive policy for maintaining discipline. (Items 6 to 10.)

The M Scale tries to measure the subjects' attitudes toward teaching methods—whether the principals will favour teaching methods that provide ample flexibility and pupil activity, and the type of criterion they will adopt for evaluating teacher efficiency. (Items 11 to 15.)

The A Scale is supposed to gauge the subjects' attitudes concerning school administration—whether the principals are in favour of consultation with the teachers in school policy, and whether they are willing to promote a closer interpersonal relationship with the teachers. (Items 16 to 20.)

The four sub-scales taken together purport to give a general indication as to "progressiveness" on the part of the subjects—whether they hold attitudes that are in line with present trends in educational thinking, which is much influenced by research in educational psychology in general and child development in particular.

Validity of the EA Scale

The EA Scale was administered to principals in the English language medium on one occasion. Out of a total of eighty-five returned scripts, sixty were selected for analysis. These were further divided into two comparable groups (Groups A and B) of equal number with sex and age controlled. It was intended to ascertain the reliability of the EA Scale. The results seem encouraging as no statistically significant differences have been detected between these two comparable groups (Table I). Hence the Scale may be considered reliable.

When Group A (English medium) and Group C (Chinese medium) are compared, they differ significantly on two of the four sub-scales and also on the EA Scale (Table IV). On the M Scale (methods), the difference is 2.38 in favour of the English medium group ($t = 5.33$, p less than 0.01). The more flexible attitude towards teaching methods as shown by the English medium group can be accounted for by the training the principals have had before they become school administrators. In Singapore, experienced classroom teachers with suitable qualifications were promoted to become school principals, usually without any formal training in school administration whatsoever. This applies to both the English and the Chinese media. However, as the teachers in the English medium were more exposed to the modern trends of education (or teaching methods, for that matter), it might not be unreasonable to assume that principals of the English medium schools (who have been classroom teachers for years before becoming school administrators) would hold more flexible attitudes towards teaching methods, whereas on the other hand, the number of principals from the Chinese schools who have undergone teacher training is comparatively small. Besides, there is a question of technical interest to psychometricians. As had been pointed out by a study in bilingualism (Kolars, 1969), the same word which is emotionally toned is semantically different to a bilingual person. As an attitude can be regarded as an emotionalised opinion, it leads us to question whether an attitude scale translated into another language (as was done with the EA Scale here) is measuring the attitude in the same manner and to the same extent.

On the A Scale (administration), the difference is 1.17 in favour of the Chinese medium group ($t = 2.42$, p less than 0.02). Generally speaking, the Chinese school principals have more experience in solving problems in administration together with their staff, in matters such as raising school funds. It should also be noted that there are more government-aided schools in the Chinese medium.* On the whole, the aided schools have more autonomy in certain aspects of school administration and less staff movements, and are expected to be more self-sufficient. It is also not uncommon that, due to lack of space, many Chinese school principals share the same common room with their staff, especially in schools with small enrolment. In short,

* 88.7% of the English medium primary schools are government schools, and 96.1% of the Chinese medium primary schools are aided schools. Percentages are calculated from data in the List of Schools, Singapore, 1969 (Research and Statistics Division, Ministry of Education, Singapore). Government Integrated Schools are not included in the calculations.

TABLE VI
MEAN SCORES OBTAINED BY VARIOUS GROUPS ON THE EA SCALE AND ITS SUB-SCALES

			<i>C Scale</i>		<i>D Scale</i>		<i>M Scale</i>		<i>A Scale</i>		<i>EA Scale</i>	
			<i>M</i>	<i>s</i>	<i>M</i>	<i>s</i>	<i>M</i>	<i>s</i>	<i>M</i>	<i>s</i>	<i>M</i>	<i>s</i>
English medium (Group A)	Men	(15)	19.60	1.88	17.60	3.31	19.90	0.99	19.33	2.13	77.87	7.31
	Women	(15)	18.13	2.39	17.60	2.92	19.80	1.60	18.87	1.60	74.40	4.17
	Both	(30)	18.17	2.15	17.60	2.72	19.85	1.33	19.10	1.88	76.14	5.92*
Chinese medium (Group C)	Men	(15)	18.07	1.75	16.80	2.75	17.74	2.34	20.74	1.98	73.07	5.75
	Women	(15)	18.66	2.06	16.07	2.90	17.20	1.66	19.80	1.78	71.74	4.25
	Both	(30)	18.37	1.91	16.44	2.54	17.47	2.03	20.27	1.88	72.41	5.04*
Whole Sample		(60)	18.27	2.03	17.02	2.63	18.66	1.73	19.69	1.88	74.28	5.50

* CR for the difference 0.838, *p* less than 0.05

EDUCATIONAL ATTITUDE SCALE

RESEARCH UNIT
TEACHERS' TRAINING COLLEGE, SINGAPORE

This is not a test in the usual sense. There are no right or wrong answers, but only different degrees of agreement to the statements. Please be frank and truthful to yourself and indicate your first and natural feelings as you read the statements.

Before you go on, please fill in the following information:

Sex

Age years

Administrative/Teaching experience years

SA = Strongly Agree. A = Agree. U = Undecided. D = Disagree. SD = Strongly Disagree.

Please circle one of the five keys against each statement to indicate your answer.

- | | | | | | |
|--|----|---|---|---|----|
| 1. Children are angels. | SA | A | U | D | SD |
| 2. Life would be more pleasant without the boisterous noise of children. | SA | A | U | D | SD |
| 3. Children are creative. | SA | A | U | D | SD |
| 4. Children's clumsiness is a passing phase of growth and it should be tolerated by adults. | SA | A | U | D | SD |
| 5. When children get together, they tend to be up to some mischief. | SA | A | U | D | SD |
| 6. Spare the rod, spoil the child. | SA | A | U | D | SD |
| 7. Children should be kept silent as far as possible. | SA | A | U | D | SD |
| 8. The school should have a set of fixed rules with different types of punishment for deviant behaviour. | SA | A | U | D | SD |
| 9. A child's problem behaviour signifies his difficulty in adjustment: and punishment will only aggravate his problem. | SA | A | U | D | SD |
| 10. A teacher who laughs with his pupils is inviting discipline problems. | SA | A | U | D | SD |
| 11. Teachers should be encouraged to make changes in their scheme of teaching to suit the progress of the pupils. | SA | A | U | D | SD |
| 12. Transmission of information is the least important function of the teachers. | SA | A | U | D | SD |
| 13. Teachers should be encouraged to experiment in their teaching methods. | SA | A | U | D | SD |
| 14. Examination results constitute the only valid criterion for gauging teacher efficiency. | SA | A | U | D | SD |
| 15. Pupils learn better through guided discovery. | SA | A | U | D | SD |

16. To run a school more efficiently, the principal should always exchange views with the teachers.
17. To become a good leader in the school, the principal should mix freely with the teachers.
18. A principal who consults the teachers is showing his own weakness.
19. Teachers should be encouraged to air their views on the way the school is run.
20. The principal should plan out the management of the affairs of the school in great detail for the teachers to follow.

SA A U D SD

SA A U D SD

SA A U D SD

SA A U D SD

SA A U D SD

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BOOK NOTICES

JAMES L. JARRETT, *Philosophy for the Study of Education* (Houghton Mifflin, Boston, 1969, \$7.95)

DESPITE its intriguingly ambiguous title Professor Jarrett's book is a straightforward book of extracts from the writings of what have come to be known as "the great educators", starting with Plato, continuing through Aquinas to Kant and Dewey and concluding with Russell, Buber and Gilbert Ryle, twenty-one authors being represented in all. The editor, it is true, has included sizable readings from his chosen authors (nearly 45,000 words of Plato and nearly 30,000 words of Kant, for example). This will certainly enable the reader to get the flavour of the authors selected though it has almost equally certainly priced the book out of the market for English students.

The book is arranged chronologically into groups of authors, each grouping having a brief historical introduction and each author being introduced by an even briefer summary of his philosophical contribution to educational thought. At the end of the book each author is allocated a group of about half a dozen "questions for study and discussion", e.g. "How risky is it, do you think, to adopt Rousseau's advice that the first education should be purely negative?" (which won't make it any easier for a novice to distinguish between philosophical and psychological matters), and "Compare St. Augustine's theory of inner truth with Plato's theory of recollection" (which is not as simple as it reads).

The readership aimed at is not explicitly stated, though "previous experience in the study of philosophy is not pre-supposed". No mention is made of what previous experience of the study of history is pre-supposed. As for the extracts themselves, "the editor's search has been for writings that are important for our own time, important for the help they can furnish us, no matter when they were written". Despite this Professor Jarrett acknowledges that "the history of educational thought is not a very rich mine for knowledge directly and immediately negotiable in to-day's intellectual market, for times and circumstances do change."

In his introductory essay on "Philosophy of Education" Professor Jarrett indicates the variety of ways in which philosophers have seen their task, and is happy to conclude "we find a certain ambiguity in the term 'philosophy' quite tolerable, and so too in the derivative term 'philosophy of Education'". The reader is assured that "he who undertakes to understand and to improve teaching and learning can profit from philosophy as a product and even more as a process", yet he is given no instruction in the

kind of question a philosopher of the analytical school might ask of these selected authors. Without guidance of this kind one fears that a book of readings such as this will too easily result in a learning of "what so-and-so said", manifested in the time-hallowed essay phrase "As Plato/Aquinas/Buber/Ryle said . . .", a basically authoritarian situation which is very far removed from that "great and humane activity" which is called "philosophising".

Equally a reader with no previous experience of the study of history will flounder when he tries to interpret what his authors say against an historical background and a philosophical background different from his own. The index is one of authors only and is therefore unhelpful, but it would be an interesting exercise to examine the variety of meanings put to the word "nature" in the readings offered, an exercise, however, which our non-philosopher and non-historian would patently be unable to undertake. The kind of background historical information which is offered is necessarily too bald to be of value, and nowhere does the editor think it necessary or indeed helpful to present a case in justification of the argument that the part is in some sense "relevant" to the present, though he does make the modest *assertion*, for example, that "a Montaigne or Rousseau sketching the design of the ideal tutor can be strongly suggestive to us as we ponder ways of developing in the young the power of independent fearless thought".

It is difficult to see in what ways the book could be of use to students preparing to be teachers. A mastery of its contents would require some previous experience in the study of both history and philosophy, and presumably one wants to avoid the simple memorising and regurgitation which all too often result from using a book of this kind.

K. CHARLTON

- NORMAN J. BULL, *Moral Education* (Routledge and Kegan Paul, 1969, 25s.)
CLARENCE H. FAUST and JESSICA FEINGOLD (eds.), *Approaches to Education for Character; strategies for change in higher education* (Columbia University Press, New York, 1969, \$10).

THE British Humanist Association has for some years been asking that children in school should have a properly planned and directed education into morals. To some measure its plea has been endorsed by the group of Humanists and Christians who have been meeting in London and who in 1969 produced a second joint statement entitled *Humanism and Christianity*—*The Common Ground of Moral Education*. The problem seems to be one of producing a valid syllabus, possibly because we have never thought out very clearly what particular moral principles are apposite for children of different ages of development.

R. G. Goldman's researches into religious learning have gone far to impel major overdue curriculum reforms in religious education in schools. Now Dr Bull has "done a Goldman" about children's moral concepts, and

this may help the eventual production of a workable syllabus of moral education.

He distinguishes the stages of moral development—from anomy, the pre-operational stage before moral concepts have been formed, through the external morality or heteronomy required from children by parents and teachers, and then the morality which is imposed by society and which he calls socionomy or external-internal morality, to autonomy which is the stage when conscience properly matured enables the rules governing moral behaviour to come from the individual himself.

Dr Bull conducted his research by asking children of alternate years of age between 7 and 17 questions demanding judgments about incidents involving a drowning child (the "value of life" test), cheating in work and games, stealing from a cloakroom and lying. Shades of Goldman again! Indeed, Dr Bull's first book of findings about this subject bears the title *Moral Judgement from Childhood to Adolescence*; but he refrains from calling this one "*Readiness for Morality*".

Piaget's classical treatment of the subject (*The Moral Judgement of the Child* (1932)) owed much to detailed observation of children's traditional games from which he deduced the strength of the forces of custom and social approval in formulating moral values. Bull's research leads him to challenge Piaget's conclusions at a number of points (see pp. 34, 42, 77, 113 etc.). This is not the place to analyse the differences, but only to call attention to the fact that, for instance, Bull finds the key to moral development in parental influence whereas for Piaget the process is primarily a matter of maturation and cognition.

By whatever different reasoning, both come to the same sort of judgment, which is expressed by Bull (p. 173) in this way: "It is with the search for meaning and purpose that the adolescent is increasingly concerned." It is significant that an age which has watched a drastic decline in religious faith has observed a growing kindness, tolerance and compassion in society. This like other facts in our experience calls in question the facile way in which many of us have for so long tacitly assumed that morality and religion were intimately related. Dr Bull has rendered a service to educators by suggesting a philosophy for an education into morality, if he has not propounded a methodology.

That, to some degree, is the task of the second book, which indicates how university teachers in the United States are deeply involved in inculcating responsible attitudes in the professions. The Conference on Science, Philosophy and Religion devoted its 1966 meeting to listening to twenty-three papers from experts who were concerned with the development of ethical concepts in training lawyers, soldiers, public administrators, priests, policemen and teachers of young children.

It is worthy of comment that a great country, which has until very recently been suspicious of teaching religion to children in its schools, should now be so exercised about the necessity of teaching morals in its

institutions of higher learning that it establishes research fellowships and even university chairs with this in mind. Many of the problems, and some of the solutions, can be recognised on this side of the Atlantic: for instance, the impact of the mass media on young people undergoing training for the professions. We can be thankful, though, that the major problem in discussing moral education in our urban communities is not segregation and zoning (see pp. 117-19, 126-9).

Both books are welcome additions to the literature which reminds us, if we need such a reminder, that educators at every level cannot escape responsibility for the ethical standards of the community which they serve and to which they belong.

H. F. MATHEWS

B. A. PHYTHIAN (ed.), *Considering poetry: An Approach to Criticism* (The English Universities Press, 1970, 16s.)

SEVEN of Mr Phythian's colleagues at Manchester Grammar School, plus lecturers at Exeter University and Chorley College of Education, are contributors to this book, which is intended to provide material for two or three years' study in sixth forms and places of further education. The book is in two parts. Part 1 consists of six chapters on the approach to poetry, Part 2 of four sections of poems for criticism, plus a Glossary of Technical Terms. The editor recommends that after the first two chapters ("Reading Poetry" and "The Technique of Poetry") we should pass on to Part 2.

The first two chapters contain many pleasing features, and some less pleasing. The varied methods of approach suggested in Chapter 1 (e.g. "instant reaction" to a poem; in small groups; in pairs) would prove helpful and interesting, but why are all the poems here modern? Elsewhere the balance between old and new is admirably kept. The "General Points for Discussion" at the end of this chapter do not belong here very happily ("Must poetry have a 'special' subject-matter?" "How short can a poem be?" etc.). The central difficulty of the subject of Chapter 2 is a familiar one in critical work in the sixth form: how much help to give? Too few questions/suggestions, and the pupil may flounder; too many, and his interest quickly disappears. By and large, in the "Imagery" section, the attention of the pupil is directed tactfully, though possibly in the Donne and Marvell discussions the compilers are straining against their self-imposed limits. The section on "Diction" is good, with widely varied material; the other two sections in this chapter, "Rhythm" and "Sounds, Rhymes and Forms", are also good.

There are some reservations about the other chapters. Seven pages is long for the discussion of a sixth-former's poem (in Chapter 3, "Three Poems and their Critics"). The study of authors' alterations (Chapter 4) is possibly rather specialised; anyway, Wallace Hildick's book *Word for Word* is available if this kind of work is thought necessary. Chapter 5, "Writing Poetry", is perfunctory. Will pupils nowadays have reached the

sixth form without meeting haiku? Chapter 6, "What is Poetry", with its section of pronouncements by Coleridge, Housman, Arnold, and so on, is something of a rag-bag.

The poems in Part 2 are divided into four sections: (A) Single Poems, (B) More Difficult Poems, (C) Poems for Comparison, (D) Poems with Questions. The choice is judicious and stimulating (though it seems odd to find Emily Dickinson in (A) and de la Mare in (B)).

Despite the above criticisms, this book is to be recommended for use. I can imagine very interesting lessons in class, and the individual student, if he reads parts of the book privately, will receive considerable help from it.

A. W. HOLDEN

DICK FIELD, *Change in Art Education* (Routledge and Kegan Paul, The Students' Library of Education, 25s.)

A GROUP of books that are entitled a "Library of" always cause me to be wary. Extending this concept to "The Student's Library of . . ." gives me double cause for concern, if for no other reason than the absolute authority that it suggests; if anything the distinguished group of scholars associated with this project only strengthen my fears that some of the students for whom these works are intended will regard them as a complete diet rather than a stimulant.

If I have to criticise the author of this most recent addition to the series it would be that although he is obviously aware of his responsibilities to the "Library" as a whole (one reflection of this concern is seen in the sensible suggestions for further reading) the complexity of the subject that he is dealing with and the enforced brevity of the work have split the book in two.

For a student audience it would seem reasonable to lay a ground of comment concerning the nature of the creative process, how it has been and is incorporated into our educational system and what the factors are that influence art education as we know it. This Mr Field has done. So much for the diet, but the stimulating criticism of the present system and suggestions for the future are too good. Unfortunately the brevity of the first three chapters will mean that further reading will have to be done before the excellence and sophistication of the rest of the book can be understood.

For the more advanced student and teacher in service there are parts of this book that are going to make it one of the milestones of comment on English Art Education. No-one has so far published a view of the whole process of art education that shows such insight as Mr Field does in his chapter "Art Education seen as a sequential whole". It is revealed as a form of understanding as well as of communication, that has been relegated to the position within the syllabus of training for a specific kind of performance: indeed, when even Professor Misha Black of the Royal College of Art can be reported as saying (*Times Educational Supplement*, 13.3.70) to

a group of art students, "If you want to have art education without taking into account industrial needs then you must accept that you won't get jobs at the end of it", then the whirlwind that Mr Field suggests that art educators are attempting to harness must seem to many fine-art departments in the new polytechnics to be more like a whirlpool. English art education is at a crossroads and if it is to take its place as a really useful area of study aimed at the development of people and not just artists in higher as well as secondary education, then Mr Field's views should have a wider audience than the student one for whom this book was designated.

Out of the many other issues that are raised I will restrict my remarks to only one because it seems to be the key to so much. Mr Field makes the point that, as well as performance, active self-analysis on the part of the pupil is going to be a significant future trend and goes on to suggest that this is going to lead to a consequent reconsideration of the skills that an art teacher should possess. The point here is that these skills will not grow out of thin air, they will only be formed by advanced study and research for which more avenues must be created than at present exist. I can do no better than to finish with his own words.

"Already pressure is developing from students who have taken or are taking advanced diplomas in centres of art teacher education to proceed to further qualifications. It will not be long before students holding B.Ed. are coming forward for further study. Clearly a condition of imbalance within the field of art education would be created if these latter students held an advantage over Dip.A.D. students. It is therefore greatly to be desired that the universities should develop a more concerted and liberal policy with regard to art qualifications" (p. 103).

MICHAEL STEVENI

INFORMATION FOR CONTRIBUTORS

The *Educational Review* publishes three times a year general articles and accounts of research of interest to teachers, to lecturers, to research workers in education and educational psychology and to students of education. Articles dealing with research, with descriptions of experimental work in schools, with critical reviews of teaching methods or curricular content in schools will receive special consideration. In addition, the Editors will accept from time to time articles on administrative problems, on tests and measurement, on child growth and development and on the relation of schools to the community.

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THE CONTEXT OF LANGUAGE

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THE CONTEXT OF LANGUAGE

EDITED BY ANDREW WILKINSON

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INTRODUCTION: CONTEXT OF SITUATION

'SOCIOLOGICAL linguistics is the great field for future research,' wrote Firth in 1935. Educationists, at least, have taken a long time to realise this. Until comparatively recently much language work in schools was based on the analysis of decontextualised sentences. Much work in educational psychology and in linguistics has tended in the same direction. The educational psychologist has been concerned with objective measures of linguistic ability, particularly in describing the language development of young children (McCarthy is a mine for this work). The linguist has concentrated on language, but on the phonological, lexical, and grammatical levels. These things are very understandable from many viewpoints, not least being that of the manageability of data. Nevertheless the approach has had distorting effects. In the last resort language is a means of communication, of semantics. And, to quote Firth again, 'The central concept of the whole of semantics . . . is the context of situation'.

In fact the preoccupation in recent decades has been with 'structure' rather than meaning. Our fascination with the concept of 'structure' in the social sciences provides an object lesson in how words use men. It is a hard word—firm, stark, even white and gleaming, with the strength of steel, the basicness of bone, with a blessed aura of the natural sciences about it. Use it in linguistics, or sociology, or curriculum, and your authority is assured, your research proposal accepted. The pursuit of 'structures' in children's language, for instance, has occupied many teams of research workers on both sides of the Atlantic for countless hours. And yet it now appears that 'structure' does not matter: that is to say, for all practical purposes, every normal child develops comparatively early a full range of 'syntactic structures'. And not only the normal child; Widlake, in a forthcoming *Review* paper, finds evidence of a wide range of such structures in 'linguistically deprived' children. What matters are the meanings the child conveys, and there is not a one to one correspondence between meaning and structure, or for that matter lexis.

A much more satisfactory metaphorical use of structure would seem to be the Piagetian one for mental organisation in that this

describes in internal dynamic rather than an external static. Peel uses this in his discussion of meaning: 'psychologically meanings can be said to begin when the thinker has any mental structure at all into which the new experience can be assimilated and which structure itself in the process may be accommodated by the new experience'. His discussion of the various vectors of meaning provides a valuable complement to the situational concerns of other contributors.

For the present collection of papers we see a preoccupation not with language so much as with language in a total situation, as Halliday expresses it in a heading: 'Language as social behaviour an acknowledged concern of modern linguistics, and not limited to the study of instances'. Britton also goes beyond the language to the conventions maintained by 'the mutual acknowledgment of participating subjects' in the chosen type of linguistic behaviour. Barnes looks at roles in relation to language; 'the socialisation of the pupils into classroom roles and the effect of these on language behaviour and therefore upon other kinds of learning'.

There is to be noticed a concern for linguistic capability, how it is to be defined, how it can be assessed, and how it is to be developed. Sinclair sees a need for more specific guidance in teaching, and a model more contextually based than those current which are 'ego-centric' in the Piagetian sense in that they are addressor-centred. But actually the overall concern is with even more than linguistic capability; the emphasis on context of situation means that it is with *communicative* capacity. And this field is vast. For example, visual, tactile, proxemic, kinesic, and paralinguistic channels have scarcely been examined, singly or in relation to the linguistic. Despite all the work done so far we are just at the beginning of an exploration of the context of situation.

ANDREW WILKINSON

LANGUAGE IN A SOCIAL PERSPECTIVE*

by M. A. K. HALLIDAY

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THE studies which are described in the series of monographs entitled *Primary Socialization, Language and Education*, edited by Basil Bernstein, show how in a coherent social theory a central place is occupied by language, as the primary means of cultural transmission.

What is the nature of language, when seen from this point of view? There are two sides to this question. The first is, what aspects of language are highlighted—what do we *make* language look like, so to speak—in order to understand its function in the socialization of the child, and in the processes of education? The second is the same question in reverse: what do we learn about language—what *does* it look like, in fact—when it is approached in this way?

I. LANGUAGE AS SOCIAL BEHAVIOUR AN ACKNOWLEDGED CONCERN OF MODERN LINGUISTICS, AND NOT LIMITED TO THE STUDY OF INSTANCES

It has been suggested that one of the main preoccupations of the 1970's will be a concern with social man. This implies not simply man in relation to some abstract entity such as 'society as a whole' but man in relation to other men; it is a particular facet of man in relation to his environment, only it shifts the emphasis from the physical on to the human environment—on to man in the environment of men. The individual is seen as the focus of a complex of human relationships which collectively define the content of his social behaviour.

This provides a perspective on language. A significant fact about the behaviour of human beings in relation to their social environment is

*This paper was first prepared for the Second International Congress of Applied Linguistics, Cambridge, September, 1969. A revised version of it was presented to the Oxford University Linguistic Society on 21 October 1969.

that a large part of it is linguistic behaviour. The study of social man presupposes the study of language and social man.

A concern with language and social man has for a long time been one of the perspectives of modern linguistics. In 1935 J. R. Firth, introducing the term 'sociological linguistics', discussed the study of language in a social perspective and outlined a programme of 'describing and classifying typical contexts of situation within the context of culture . . . [and] types of linguistic function in such contexts of situation' (p. 27). We tend nowadays to refer to sociolinguistics as if this was something very different from the study of language as practised in linguistics *tout court*; but in a way new 'sociolinguistics' is but old 'linguistics' writ large, and the linguist's interests have always extended to language as social behaviour.

It was Malinowski from whom Firth derived his notions of 'context of culture' and 'context of situation' (Malinowski, 1923); and Malinowski's ideas about what we might call cultural and situational semantics provide an interesting startingpoint for the study of language and social man, since they encourage us to look at language as a form of behaviour potential. In this definition, both the 'behaviour' and the 'potential' need to be emphasized. Language, from this point of view, is a range of possibilities, an open-ended set of options in behaviour that are available to the individual in his existence as social man. The context of culture is the environment for the total set of these options, while the context of situation is the environment of any particular selection that is made from within them.

Malinowski's two types of context thus embody the distinction between the potential and the actual. The context of culture defines the potential, the range of possibilities that are open. The actual choice among these possibilities takes place within a given context of situation.

Firth, with his interest in the actual, in the text and its relation to its surroundings, developed the notion of 'context of situation' into a valuable tool for linguistic enquiry. Firth's interest, however, was not in the accidental but in the typical: not in this or that piece of discourse that happened to get recorded in the fieldworker's notebook, but in repetitive patterns which could be interpreted as significant and systematizable patterns of social behaviour. Thus, what is actual is not synonymous with what is unique, or the chance product of random observations. But the significance of what is typical—in fact the concept 'typical' itself—depends on factors which lie outside

language, in the social structure. It is not the typicalness of the words and structures which concerns us, but the typicalness of the context of situation, and of the function of the words and structures within it.

Malinowski (1935) tells an interesting story of an occasion when he asked his Trobriand Island informant some questions about the Trobrianders' gardening practices. He noted down the answers, and was surprised a few days later to hear the same informant repeating what he had said word for word in conversation with his young daughter. In talking to Malinowski, the informant has as it were borrowed the text from a typical context of situation. The second occasion, the discussion with the little girl, was then an instance of this context of situation, in which the socialization of the child into the most significant aspect of the material culture—the gardening practices—was a familiar process, with familiar patterns of language behaviour associated with it.

There is not, of course, any conflict between an emphasis on the repetitive character of language behaviour and an insistence on the creativity of the language system. Considered as behaviour potential, the language system itself is open-ended, since the question whether two instances are the same or not is not determined by the system; it is determined by the underlying social theory. But in any case, as Ruqaiya Hasan (1971) has pointed out, creativeness does not consist in producing new sentences. The newness of a sentence is a quite unimportant—and unascertainable—property, and 'creativity' in language lies in the speaker's ability to create new meanings: to realize the potentiality of language for the indefinite extension of its resources to new contexts of situation. It is only in this light that we can understand the otherwise unintelligible observation made by Katz and Fodor (1963), that 'almost every sentence uttered is uttered for the first time' (p. 171). Our most 'creative' acts may be precisely among those that are realized through highly repetitive forms of behaviour.

Firth did not concern himself with Malinowski's 'context of culture', since he preferred to study generalized patterns of actual behaviour, rather than attempting to characterize the potential for such. This was simply the result of his insistence on the need for accurate observations—a much-needed emphasis in the context of earlier linguistic studies—and in no way implied that the study of language could be reduced to the study of instances, which in fact he explicitly denied (1968). More to the point, Firth built his linguistic theory around the original and fundamental concept of the 'system

as used by him in a technical sense; and this is precisely a means of describing the potential, and of relating the actual to it.

A 'system', as the concept was developed by Firth, can be interpreted as the set of options that is specified for a given environment. The meaning of it is 'under the conditions stated, there are the following possibilities'. By making use of this notion, we can describe language in the form of a behaviour potential. In this way the analysis of language comes within the range of a social theory, provided the underlying concepts of such a theory are such that they can be shown to be realized in social context and patterns of behaviour.

The interest in language and social man is thus no new theme in linguistics. It is also predominant in the important work of Pike (1967, first published 1954-60). Its scope is not limited to the description of individual acts of speech; more significant has been the attempt to relate grammatical and lexical features, and combinations of such features, to types of social interaction and, where possible, to generalized social concepts. From a sociological point of view it would be of no interest otherwise; a social theory could not operate with raw speech fragments as the only linguistic exponents of its fundamental ideas.

2. LANGUAGE IN A SOCIAL PERSPECTIVE INTERPRETED THROUGH THE CONCEPT OF 'MEANING POTENTIAL'

If we regard language as social behaviour, therefore, this means that we are treating it as a form of behaviour *potential*. It is what the speaker can do.

But 'can do' by itself is not a linguistic notion; it encompasses types of behaviour other than language behaviour. If we are to relate the notion of 'can do' to the sentences and words and phrases that the speaker is able to construct in his language—to what he can say, in other words—then we need an intermediate step, where the behaviour potential is as it were converted into linguistic potential. This is the concept of what the speaker 'can mean'.

The potential of language is a meaning potential. This meaning potential is the linguistic realization of the behaviour potential; 'can mean' is 'can do' when translated into language. The meaning potential is in turn realized in the language system as lexicogrammatical potential, which is what the speaker 'can say'.

Each stage can be expressed in the form of options. The options in the construction of linguistic forms—sentences, and the like—serve

to realize options in meaning, which in turn realize options in behaviour that are interpretable in terms of a social theory.

We can illustrate this point by reference to Basil Bernstein's work in the area of language and social structure (Bernstein, 1967, 1970). On the basis of a theory of social learning, Bernstein identifies a number of social contexts which are crucial to the socialization of the child, for example contexts in which the mother is regulating the child's behaviour or in which she is helping him in learning to carry out some kind of task. These are 'typical contexts of situation', in Firth's sense, but given significance by the theory underlying them.

For any one of these contexts Bernstein is able to specify a range of alternatives that is open to the mother in her interaction with the child. For example, in regulating the child's behaviour she may adopt one (or more) of a number of strategies, which we might characterize in general terms as reasoning, pleading, threatening, and the like, but which the theory would suggest represent systematic options in the meanings that are available to her. Bernstein in fact makes use of the term 'meanings' to refer to significant options in the social context; and he regards those as being 'realized' in the behaviour patterns. But this is realization in exactly the linguistic sense, and the behaviour patterns are, at least partly, patterns of meaning in the linguistic sense—the mother's behaviour is largely language behaviour. So the chain of realizations extends from the social theory into the language system.

Hence the behaviour potential associated with the contexts that Bernstein identifies may be expressed linguistically as a meaning potential. Some such step is needed if we are to relate the fundamental concepts of the social theory to recognizable forms and patterns of language behaviour.

A word or two should be said here about the relation of the concept of meaning potential to the Chomskyan notion of competence, even if only very briefly. The two are somewhat different. Meaning potential is defined not in terms of the mind but in terms of the culture; not as what the speaker knows, but as what he can do—in the special sense of what he can do linguistically (what he 'can mean', as we have expressed it). The distinction is important because 'can do' is of the same order of abstraction as 'does'; the two are related simply as potential to actualized potential, and can be used to illuminate each other. But 'knows' is distinct and clearly insulated from 'does'; the relation between the two is complex and oblique,

and leads to the quest for a 'theory of performance' to explain the 'does'.

This is related to the question of idealization in linguistics. How does one decide what is systematic and what is irrelevant in language—or, to put the question another way, how does one decide what are different sentences, different phrases, and so on, and what are different instances of the same sentence, the same phrase? The issue is a familiar one to readers of this journal, from the article by Peter Geach in the volume *The Place of Language* (Wilkinson, 1969). Geach's argument is, that in order to understand the logical structure of sentences we have to 'iron out' a lot of the differences that occur in living speech: '... idealization which approximates slightly less well to what is actually said, will, by the standards of logical insight into the structures of sentences, pay off better than some analyses that try to come closer to what is actually said' (p. 23).

The philosopher's approach to language is always marked by a very high degree of idealization. In its extreme form, this approach idealizes out *all* natural language as irrelevant and unsystematic and treats only constructed logical languages; a less extreme version is one which accepts sentences of natural language but reduces them all to a 'deep structure' in terms of certain fundamental logical relations. Competence, as defined by Chomsky, involves (as Geach objects) a lower degree of idealization than this. But it is still very high from other points of view, particularly that of anyone interested in language as behaviour. Many behaviourally significant variations in language are simply ironed out, and reduced to the same level as stutterings, false starts, clearings of the throat and the like.

It might be claimed at this point that linguistics is anyway an autonomous science and does not need to look outside itself for criteria of idealization. But this is not a very satisfactory argument. There is a sense in which it is autonomous, and has to be if it is to be relevant to other fields of study: the particulars of language are explained by reference to a general account of language, not by being related piecemeal to social or other non-linguistic phenomena. But this 'autonomy' is conditional and temporary; in the last analysis, we cannot insulate the subject within its own boundaries, and when we come to decide what features in language are to be ignored as unsystematic we are bound to invoke considerations from outside language itself. The problem is met by Chomsky, who regards linguistics as a branch of theoretical psychology. But one may agree with the need for a point of departure from outside language without

insisting that this must be sought in one direction and no other—only in psychology, or only in logic. It may just as well be sought in a field such as sociology whose relationship with linguistics has been no less close.

Sociological theory, if it is concerned with the transmission of knowledge or with any linguistically coded type of social act, provides its own criteria for the degree and kind of idealization involved in statements about language; and Bernstein's work is a case in point. In one sense, this is what it is all about. There is always some idealization, where linguistic generalizations are made; but in a sociological context this has to be, on the whole, at a much lower level. We have, in fact, to 'come closer to what is actually said'; partly because the solution to problems may depend on studying what is actually said, but also because even when this is not the case the features that are behaviourally relevant may be just those that the idealizing process most readily irons out. An example of the latter would be features of assertion and doubt, such as *of course*, *I think*, and question tags like *don't they?*, which turn out to be highly significant—not the expressions themselves, but the variations in meaning which they represent, in this case variation in the degree of certainty which the speaker may attach to what he is saying (Turner & Pickvance, 1969).

In order to give an account of language that satisfies the needs of a social theory, we have to be able to accommodate the degree and kind of idealization that is appropriate in that context. This is what the notion of meaning potential attempts to make possible. The meaning potential is the range of *significant* variation that is at the disposal of the speaker. The notion is not unlike Dell Hymes' (1970) 'communicative competence', except that Hymes defines this in terms of 'competence' in the Chomskyan sense of what the speaker knows, whereas we are talking of a potential—what he can do, in the special linguistic sense of what he can mean—and avoiding the additional complication of a distinction between doing and knowing. This potential can then be represented as systematic options in meaning which may be varied in the degree of their specificity—in what has been called 'delicacy'. That is to say, the range of variation that is being treated as *significant* will itself be variable, with either grosser or finer distinctions being drawn according to the type of problem that is being investigated.

3. LANGUAGE AS OPTIONS

Considering language in its social context, then, we can describe it

in broad terms as a behaviour potential; and more specifically as a meaning potential, where meaning is a form of behaving (and the verb *to mean* is a verb of the 'doing' class). This leads to the notion of representing language in the form of options: sets of alternative meanings which collectively account for the total meaning potential.

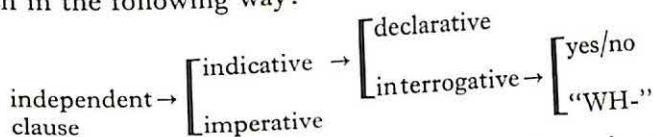
Each option is available in a stated environment, and this is where Firth's category of system comes in. A system is an abstract representation of a paradigm; and this, as we have noted, can be interpreted as a set of options with an entry condition—a number of possibilities out of which a choice has to be made if the stated conditions of entry to the choice are satisfied. It has the form: if *a*, then either *x* or *y* (or . . .). The key to its importance in the present context is Firth's 'polysystemic principle', whereby (again following this interpretation) the conditions of entry are required to be stated for each set of possibilities. That is to say, for every choice it is to be specified where, under what conditions, that choice is made. The 'where', in Firth's use of the concept of a system, was 'at what point in the structure'; but we interpret it here as 'where in the total network of options'. Each choice takes place in the environment of other choices. This is what makes it possible to vary the 'delicacy' of the description: we can stop wherever the choices are no longer significant for what we are interested in.

The options in a natural language are at various levels: phonological, grammatical (including lexical, which is simply the more specific part within the grammatical) and semantic. Here, where we are concerned with the meaning potential, the options are in the first instance semantic options. These are interpreted as the coding of options in behaviour, so that the semantics is in this sense a behavioural semantics.

The semantic options are in turn coded as options in grammar. Now there are no grammatical categories corresponding exactly to such concepts as those of reasoning, pleading or threatening referred to above. But there may be a prediction, deriving from a social theory, that these will be among the significant behavioural categories represented in the meaning potential. In that case it should be possible to identify certain options in the grammar as being systematic realizations of these categories, since presumably they are to be found somewhere in the language system. We will not expect there to be a complete one-to-one correspondence between the grammatical options and the semantic ones; but this is merely allowing for the

normal phenomena of neutralization and diversification that are associated with all stages in the realization chain.

There is nothing new in the notion of associating grammatical categories with higher level categories of a 'socio-' semantic kind. This is quite natural in the case of grammatical forms concerned with the expression of social roles; particularly those systems which reflect the inherent social structure of the speech situation, which cannot be explained in any other way. The principal component of these is the system of mood. If we represent the basic options in the mood system of English in the following way:



(to be read 'an independent clause is either indicative or imperative; if indicative, then either declarative or interrogative', and so on), we are systematizing the set of choices whereby the speaker is enabled to assume one of a number of possible communication roles—social roles which exist only in and through language, as functions of the speech situation. The choice of interrogative, for example, means, typically, 'I am acting as questioner (seeker of information), and you are to act as listener and then as answerer (supplier of information)'. By means of this system the speaker takes on himself a role in the speech situation and allocates the complementary role—actually, rather, a particular choice of complementary ones—to the hearer, both while he is speaking and after he has finished.

These 'communication roles' belong to what we were referring to as 'socio-semantics'. They are a special case in that they are a property of the speech situation as such, and do not depend on any kind of a social theory. But the relationship between, say, 'question' in semantics and 'interrogative' in grammar is not really different from that between a behavioural-semantic category such as 'threat' and the categories by which it is realized grammatically. In neither instance is the relationship one to one; and while the latter may be rather more complex, a more intensive study of language as social behaviour also suggests a somewhat more complex treatment of traditional notions like those of statement and question. Part of the grammar with which we are familiar is thus a sociological grammar already, although this has usually been confined to a small area where the meanings expressed are 'social' in a rather special sense, that of the social roles created by language itself.

However, the example of the mood system serves to show that, even if we are operating only with the rather oversimplified notions of statement, question, command and the like, categories like these occupy an intermediate level of 'meaning potential' which links behavioural categories to grammatical ones. We do not usually find a significant option in behaviour represented straightforwardly in the grammatical system; it is only in odd instances that what the speaker 'can do' is coded immediately as what he 'can say'. There is a level of what he 'can mean' between the two.

The relation between the levels of meaning and saying, which is one of realization, involves as we have said departures from a regular pattern of one-to-one correspondence. In any particular socio-linguistic investigation, only some of the total possible behavioural options will be under focus of attention; hence we shall be faced especially with instances of 'one-to-many', where one meaning is expressed in different forms. But in such instances we can often invoke the 'good reason' principle, by which one of the possibilities is the 'unmarked' one, that which is chosen to express the meaning in question unless there is good reason to choose otherwise. For example, a question is typically realized in the grammar as an interrogative, and there has to be a 'good reason' for it to be expressed in some other form, such as a declarative. And secondly, the implication of 'one meaning realized by many forms', namely that there is free variation among the possibilities concerned, is unlikely to be the whole truth; it nearly always signifies that there is a more subtle choice in meaning that we have not yet cottoned on to, or that is irrelevant in this particular context.

So a category like that of 'threat', assuming that such a category is identified within the meaning potential, on the basis perhaps of a theory of socialization, will be realized in the language system through a number of different grammatical options. These might include, for example, declarative clauses of a certain type, perhaps first person singular future tense with a verb from a certain lexical set (often identifiable in Roget's *Thesaurus*!), and with attached *if* clause, e.g. *if you do that again I'll smack you*; but also certain other forms, negative imperative with *or* (*don't do that again or . . .*), conditioned future attributive clauses with *you* (*you'll be sorry if . . .*), and so on. These may appear at first sight to be merely alternative ways of expressing a threat, in free variation with each other. But it is very likely that on closer inspection they will be found to represent more delicate (though perhaps still significant) options in the meaning

potential. At the same time it might be the case that one of them, possibly the first one mentioned above, could be shown on some grounds to be the typical form of threat (perhaps just in this context), the others all being 'marked' variants; we are then committed to stating the conditions under which it is *not* selected but are not required to give any further explanation when it is.

4. AN EXAMPLE

Let us consider a hypothetical example of the behaviour potential associated with a particular social context. We will keep within the general framework of Bernstein's theory of socialization, and take up the type of context already mentioned, that of parental control; within this area, we will construct a particular instance that will yield a reasonably simplified illustration. It should be said very clearly that both the pattern of options and the illustrative sentences have been invented for this purpose; they are *not* actual instances from Bernstein's work. But they are modelled closely on Bernstein's work, and draw on many of his underlying concepts. In particular I have drawn on Geoffrey Turner's studies, in which he has made use of the linguistic notion of systems representing options in meaning for the purpose of investigating the role of language in control situations (Turner, forthcoming).

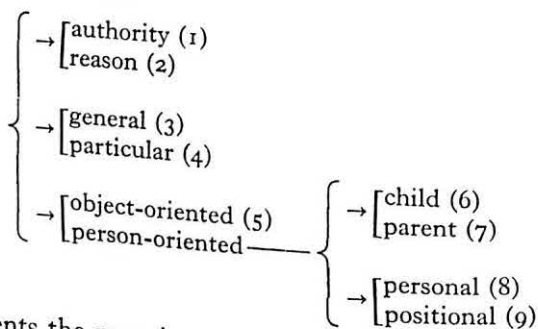
Let us imagine that the small boy has been playing with the neighbourhood children on a building site. His mother disapproves both of the locale and of the company he has been keeping, and views with particular horror the empty tin or other object he has acquired as a trophy. She wants both to express her disapproval and to prevent the same thing happening again. She might say something like 'that sort of place is not for playing in', or 'I don't like you taking other people's things', or 'they don't want children running about there', or 'just look at the state of your clothes', or 'I'm frightened you'll hurt yourself', or many other things besides.

Various means are open to the mother here for making her intentions explicit. Now, in terms of the actual sentences she might utter, the range of possibilities is pretty well unlimited. But a particular theory about the function of the regulatory context in the socialization of the child would suggest that she is actually operating within a systematic framework of very general options, any one of which (or any one combination) might be expressed through the medium of a wide range of different lexico-grammatical forms. These options

represent the meaning potential lying behind the particular instances.

We will assume that the mother is using some form of appeal, as distinct from a direct injunction or a threat. She may simply enunciate a rule, based on her authority as a parent; or she may appeal to reason, and give an explanation of what she wants. Let us call this 'authority or reason'. Secondly, and at the same time, she may formulate her appeal in general or in particular terms, either relating this event to a wider class of situations or treating it on its own; we will say that the appeal may be 'general' or 'particular'. And she may slant her appeal away from the persons involved towards the material environment and the objects in it ('object-oriented'); or she may concentrate on the people ('person-oriented')—in which case the focus of attention may either be on the parent (the mother herself, and perhaps the father as well) or on the child. Finally, if the orientation is towards people, there is another option available, since the appeal may be either 'personal' or 'positional': that is, relating to the child or herself either as individuals, or in their status in the family, the age group and so on. Thus *you* may mean 'you, Timmy'; or it may mean 'you as my offspring', 'you as a young child' or in some other defined social status.

We may now represent these possibilities in the following way as a network of alternatives:



This represents the meaning potential that is open to the mother in the situation, as far as we have taken it in the present discussion.

The categories in this semantic network are not immediately recognizable as linguistic categories. There is no category of 'object-oriented' or 'positional' in the grammar of English, no grammatical system of 'authority/reason'. But if this network of options is a valid account of a part of the range of alternatives that are open to the mother as regards what she 'can mean' in the situation, then the implication is that these options will be found to be realized somewhere in the linguistic system, in the things that she can say.

Any one selection from within this range of options could be realized through a wide range of different grammatical categories and lexical items. Take for example the combination 'authority, general, object-oriented'. The mother might say *that sort of place is not for playing in*, or she might say *we don't go into places like that*, or *other people's things aren't for playing with*, or *we don't take other people's property*; all of these would be instances of the particular combination of options just mentioned. Here we have alternative forms of expression for what are, within the limits of the few distinctions recognized in our illustration, the same selections in meaning. As far as their grammar and vocabulary is concerned, there are certain things common to two or more of these examples which can be related to their common element in their meanings: for example the form . . . (*is/are*) *not for* . . . *ing (in/with)*, the form *we don't* . . . , the reference to *place*, and so on. But in other respects they are very different, and involve categories that might not otherwise be brought together from their different places in the description of the grammar, such as *we don't X with/in Y* and *Y is not for X-ing with/in* as forms of disapproval, or the different categories represented by the words *place* and *thing* (including *property*, which can be interpreted as either). Note that *place* and *thing* are grouped together under the option 'object-oriented'; no doubt if the analysis was carried through to a more delicate stage they would then be distinguished, since although both represent non-personalized forms of appeal there is a difference between the notion of territory and the notion of ownership that might be significant. Meanwhile they serve to illustrate a further point, that the analysis seeks to specify as far as possible the contribution made by each particular option to the form of the sentences used. Here, for example, the feature of 'authority' is reflected in the negative and in the modal forms; that of 'general' in the tense and the noun modifiers *that sort of* . . . , . . . *like that*; that of 'object-oriented' in the words *place*, *thing* and *(other people's) property*, coupled with the absence of individualized personal pronouns.

Even though the forms used to express any one meaning selection are very varied, they are nevertheless distinct from those realizing other selections: we must in principle be able to tell what the mother means from what she says, since we are crediting the child with the ability to do so. Here to complete the illustration is a set of possible utterances by the mother representing different selections in the meaning potential. These are not intended to cover the whole of the mother's verbal intervention; some of them would need to be (and

all of them could be) accompanied by an explicit injunction such as *you're not to do that again*. They exemplify only options in the type of appeal she is using; as such, each one could occur either alone or in combination with an appeal of one of the other types. The figures following each example indicate, by reference to the network, the options it is assumed to express.

other people's things aren't for playing with (135)
 you know you don't play with those sort of boys (1368)
 they don't want children running about there (1369)
 Daddy doesn't like you to play rough games (1378)
 that tin belongs to somebody else (145)
 you can go there when you're bigger (1469)
 I was worried, I didn't know where you'd got to (1478)
 you'll ruin your clothes playing in a place like that (235)
 it's not good for you to get too excited (2368)
 boys who are well brought up play nice games in the park (2369)
 we don't want people to think we don't look after you, do we? (2379)
 that glass they keep there might get broken (245)
 you might have hurt yourself on all that glass (2468)
 I'd like you to stay and help me at home (2478)

Not all the possible combinations of options have been exemplified, and some of them are unlikely in this particular instance, although probably all could occur. Let us stress again here that both the examples and the network of options, although inspired by Bernstein's work, have been invented for the present discussion, in order to keep the illustration down to a manageable size.

A system network of this kind is open-ended. It may represent only certain very gross distinctions: in the simplest case, just a choice between two possibilities, so that all the meaning potential associated with a particular social context is reduced to 'either this or that'. But it is always capable of accommodating further distinctions—of being made more and more 'delicate'—when these are brought into the picture. Each new distinction that is introduced has implications both 'upwards' and 'downwards': that is, it is significant as an option in behaviour, and it is systematically (however indirectly) expressed in the language. Only in very restricted types of situation can anywhere near all the linguistic features of an utterance be derived from behaviourally significant options; but then there is no such thing as 'all the linguistic features of an utterance' considered apart from some external criteria of significance. The point is that, as further specification is added to the semantic systems, so more of the linguistic features come to be accounted for. This can be seen in Turner's work,

already referred to, in which he is investigating the meaning potential associated with certain contexts of the general kind we have been illustrating.

5. INTERPRETATION OF LINGUISTIC FORMS DETERMINED BY REFERENCE TO CONCEPTS OF SOCIAL THEORY

In understanding the nature of 'social man', and in particular the processes—and they are largely linguistic processes—whereby the child becomes social man, we are likely to be deeply concerned with those aspects of his experience which centre around social contexts and settings of the kind just exemplified.

We shall not of course expect to assign anything like the whole of an individual's language behaviour to situations of this kind, which can be investigated and interpreted in the light of some significant social theory. The meaning of a poem, or a technical discussion, cannot be expressed in terms of behavioural options. (It can, on the other hand, be related to a set of generalized functions of language which define the total meaning potential of the adult language system; cf. the discussion in the next section.) At the same time, the social contexts and settings for which we can recognize a meaning potential in behavioural terms are not at all marginal or outlandish; and they are contexts which play a significant part in the socialization of the child. The importance of such contexts is given by the social theory from which they are derived.

Not all the distinctions in meaning that may be associated with a context of this kind can be explained by reference to behavioural options which are universally significant in that context. Within the actual words and sentences used there is bound to be much that is particular to the local situation or the shared experience of the individuals concerned. In the illustration given in the last section, the reference to breaking glass or getting hurt by it is obviously specific to a small class of instances of a control situation; and it is likely to be significant only in relation to that setting. It is possible, however, that a highly particular feature of this kind could be the local realization of an option having a general significance: there might be some symbolic value attached to broken glass in the family, having its origin in a particular incident, and we could not know this simply from inspecting the language. And there are general shifted meanings too, extended metaphors whereby, especially in the interaction of

adult and child, behavioural options are encoded in highly complex, more or less ritualized linguistic forms; for example the bedtime story, where the princes and the giants and the whole narrative structure collectively express patterns of socialization and interpersonal meanings. Here we are led into the realms of literary interpretation, of levels of meaning in the imaginative mode, of the significance of poetic forms and the like.

Looking to the other end of the scale, we can find settings, for example games where the language plays an essential part, like pontoon or contract bridge, for which a system of meaning potential will account for a very high proportion of the words and sentences used by the participants (Mohan, 1969). These restricted settings are interesting from the point of view of sociolinguistic method, since they illustrate very well the principle of language as behaviour potential. But they may have little or no significance in themselves as social contexts, relative to any general theory of social behaviour.

What we are referring to as a 'social context' is a generalized type of situation that is itself significant in terms of the categories and concepts of some social theory. The theory may focus attention on different facets of the social structure: not only on forms of socialization and cultural transmission, but also on role relationships, on the power structure and patterns of social control, on symbolic systems, systems of values, of public knowledge and the like. Our example was drawn from the socialization of the child, because that is where most work has been done; but systematic options in language behaviour are not limited to situations of this type. Any situation in which the behavioural options open to the participants are, at least in part, realizations of some general theoretical categories is relevant as a 'social context' in this sense. Hence a particular linguistic feature may have a number of different meanings according to the type of context in which it occurs: for example, *they don't want children in there* might not be any kind of appeal—it might occur in a context that had nothing to do with socialization, not being addressed to a child at all. We could not simply take the linguistic forms for granted, as having just one behavioural interpretation.

More important, perhaps, or at least less obvious, is the fact that even within the same context a linguistic form may have different meanings, since there may be sub-cultural variants in the meaning potential (different 'codes', in Bernstein's sense; cf. Hasan, forthcoming) typically associated with that context. In other words, assuming that the sentence above was in fact being used in a regula-

tory context such as the one invented for the illustration, it might still have more than one meaning, given two distinct social groups one of which typically exploited one area of meaning potential (say, 'elaborated code') and the other another ('restricted code'). Within a 'code' in which the typical appeal was positional and non-discretionary, this example would be interpreted as an imperative, whereas in one tending towards more personal and more challengeable appeals it could be taken as a partially explicit rule. The meaning of selecting any one particular feature would be potentially different in the two 'codes', since it would be selected from within a different range of probable alternatives.

We have suggested that this use of a social context corresponds to what Firth meant by the 'typical context of situation', and that it makes the link between the two Malinowskian notions of 'context of situation' and 'context of culture' referred to at the beginning of this paper. It is the social context that defines the limits of the options available; the behavioural alternatives are to this extent context-specific. But the total range of meanings that is embodied in and realized through the language system is determined by the context of culture—in other words by the social structure.

The study of language as social behaviour is in the last resort an account of semantic options deriving from the social structure. Like other hyphenated fields of language study, socio-linguistics reaches beyond the phonological and morphological indices into the more abstract areas of linguistic organization. The concept of socio-linguistics ultimately implies a 'socio-semantics' which is a genuine meeting ground of two ideologies, the social and the linguistic. And this faces both ways. The options in meaning are significant linguistically because selections in grammar and vocabulary can be explained as a realization of them. They are significant sociologically because they provide insight into patterns of behaviour that are in turn explainable as realizations of the pragmatic and symbolic acts that are the expressions of the social structure.

In principle we may expect to find some features of the social structure reflected directly in the forms of the language, even in its lower reaches, the morphology and the phonology. The phenomenon of 'accent' is a direct reflection of social structure in the phonetic output. Such low level manifestations may be of little interest, although Labov's (1968) work on the New York dialects showed the potential significance of phonological variables in the social structure of an urban speech community. There is an analogy within the langu-

age system itself, where sometimes we find instances of the direct expression of meanings in sounds: voice qualities showing anger, and the like. But in general the forms of expression involve a number of levels of realization—a 'stratal' system (Lamb, 1966)—even within language itself; and this is the more clear when linguistic features are seen as the expression of meanings derived from behaviour patterns outside language: we will not expect to find a direct link between social content and linguistic expression, except in odd cases. The socio-semantics is the pivotal level; it is the interface between the two. Any set of strategies can be represented as a network of options; the point is that by representing it in this way we provide a link in the chain of realizations that relates language to social structure.

6. IMPORTANCE OF SOCIO-LINGUISTIC STUDIES FOR UNDERSTANDING OF THE NATURE OF LANGUAGE

The investigation of language as social behaviour is not only relevant to the understanding of social structure; it is also relevant to the understanding of language. A network of socio-semantic options—the representation of what we have been calling the 'meaning potential'—has implications in both directions; on the one hand as the realization of patterns of behaviour and, on the other hand, as realized by the patterns of grammar. The concept of meaning potential thus provides a perspective on the nature of language. Language is as it is because of its function in the social structure, and the organization of behavioural meanings should give some insight into its social foundations.

This is the significance of functional theories of language. The essential feature of a functional theory is not that it enables us to enumerate and classify the functions of speech acts, but that it provides a basis for explaining the nature of the language system, since the system itself reflects the functions that it has evolved to serve. The organization of options in the grammar of natural languages seems to rest very clearly on a functional basis, as has emerged from the work of those linguists, particularly of the Prague school, who have been aware that the notion 'functions of language' is not to be equated merely with a theory of language use but expresses the principle behind the organization of the linguistic system.

The options in the grammar of a language derive from and are related to three very generalized functions of language which we have referred to elsewhere as the ideational, the interpersonal and the

textual (Halliday, 1970). The specific options in meaning that are characteristic of particular social contexts and settings are expressed through the medium of grammatical and lexical selections that trace back to one or other of these three sources. The status of these terms is that they constitute a hypothesis for explaining what seems to be a fundamental fact about the grammar of languages, namely that it is possible to discern three distinct principles of organization in the structure of grammatical units, as described by Daneš (1964) and others, and that these in turn can be shown to be the structural expression of three fairly distinct and independent sets of underlying options.

Those of the first set, the ideational, are concerned with the content of language, its function as a means of the expression of our experience, both of the external world and of the inner world of our own consciousness—together with what is perhaps a separate sub-component expressing certain basic logical relations. The second, the interpersonal, is language as the mediator of role, including all that may be understood by the expression of our own personalities and personal feelings on the one hand, and forms of interaction and social interplay with other participants in the communication situation on the other hand. The third component, the textual, has an enabling function, that of creating text, which is language in operation as distinct from strings of words or isolated sentences and clauses. It is this component that enables the speaker to organize what he is saying in such a way that it makes sense in the context and fulfils its function as a message.

These three functions are the basis of the grammatical system of the adult language. The child begins by acquiring a meaning potential, a small number of distinct meanings that he can express, in two or three functional contexts: he learns to use language for satisfying his material desires ('I want an apple'), for getting others to behave as he wishes ('sing me a song'), and so on. In a paper in a previous volume of this journal I suggested a list of such contexts for an early stage in his language development (1969; cf. Wilkinson, 1971). At this stage each utterance tends to have one function only; but as time goes on the typical utterance becomes functionally complex—we learn to combine various uses of language into a single speech act. It is at this point that we need a grammar: a level of organization intermediate between content and expression, which can take the various functionally distinct meaning selections and combine them into integrated structures. The components of the grammatical

system are thus themselves functional; but they represent the functions of language in their most generalized form, as these underlie all the more specific contexts of language use.

The meaning potential in any one context is open-ended, in the sense that there is no limit to the distinctions in meaning that we can apprehend. When we talk of what the speaker can do, in this special sense of what he 'can mean', we imply that we can recognize significant differentiations within what he can mean, up to some point or other which will be determined by the requirements of our theory. The importance of a hypothesis about what the speaker can do in a social context is that this makes sense of what he does. If we insist on drawing a boundary between what he does and what he knows, we cannot explain what he does; what he does will appear merely as a random selection from within what he knows. But in the study of language in a social perspective we need both to pay attention to what is said and at the same time to relate it systematically to what might have been said but was not. Hence we do not make a dichotomy between knowing and doing; instead we place 'does' in the environment of 'can do', and treat language as speech potential.

The image of language as having a 'pure' form (*langue*) that becomes contaminated in the process of being translated into speech (*parole*) if of little value in a sociological context. We do not want a boundary between language and speech at all, or between pairs such as *langue* and *parole*, or competence and performance—unless these are reduced to mere synonyms of 'can do' and 'does'. A more useful concept is that of a range of behaviour potential determined by the social structure (the context of culture), which is made accessible to study through its association with significant social contexts (generalized contexts of situation), and is actualized by the participants in particular instances of these contexts or situation types.

There is no need to wait until some speaker is observed to produce a particular utterance, before one can take account of the relevant features embodied in it. Socio-linguistic studies are not bounded by the accidental frontiers of the data collected, although they do take such data rather seriously. As Bernstein's work has shown, there are many ways of investigating the language behaviour associated with a social context, ranging from hypothetico-deductive reasoning through various forms of elicitation to hopeful observation. All these are valid parts of the investigator's equipment.

The study of language in a social context tends to involve a rather

lower degree of idealization than is customary in a psycho-philosophical orientation, as we have noted already. But there is always some idealization, in any systematic enquiry. It may be at a different place; the type of variation which is least significant for behavioural studies may be just that which is most faithfully preserved in another approach—variation in the ideational meaning, in the 'content' as this is usually understood. We might for example be able to ignore distinctions such as that between singular and plural, or between *cat* and *dog*—if we were using the notion of competence and performance, then these distinctions would be relegated to performance—while insisting on the difference in meaning between *don't do that, you mustn't do that, you're not to do that*, and other variants which differ simply in intonation, in pausing and the like.

This overstates the position, no doubt. But it serves to underline the point made earlier: that the object of attention in linguistic studies is not, and never can be, some sort of unprocessed language event. When language is studied in a social perspective, the object of attention is what is usually referred to as 'text', that is, language in a context; and the text, whether in origin it was invented, elicited or recorded, is an idealized construction. But all this means is that a linguistic item—a sentence, or whatever—is well-formed if it is well-formed; there must be criteria from somewhere by which to judge. It is not easy to find these criteria within language; in 'autonomous' linguistics it is in practice usually the orthography that is used to decide what the limits of relevant differentiation are, since the orthography is itself a codified form of idealization (rather as the 'text' of a piece of music is the score). Criteria are found more readily at the interfaces between language and non-language, by reference to something outside language; in a social context, the degree and kind of idealization is determined at the socio-semantic interface. In principle, what is well-formed is whatever can be shown to be interpretable as a possible selection within a set of options based on some motivated hypothesis about language behaviour; and 'motivated' here means extrinsically motivated by reference ultimately to (a theory about) some feature of the social structure.

The perspective is one in which there are two different but related depths of focus. The more immediate aim, from the point of view of linguistics, is the intrinsic one of explaining the nature of language. This implies an 'autonomous' view of linguistics. There is also a further, extrinsic aim, that of explaining features of the social structure, and using language to do so. This implies an 'instrumental'

approach. But ultimately the nature of language is explained in terms of its function in the social structure; so the pursuit of the first aim entails the pursuit of the second. To understand language, we examine the way in which the social structure is realized through language: how values are transmitted, roles defined, and behaviour patterns made manifest.

The role of language in the educational process is a special aspect of the relation between language and social structure. Bernstein's theories concerning the linguistic basis of educational failure are part of a wider theory of language and society, which encompasses much more than the explanation of the linguistic problems imposed by the educational system on the child whose socialization has taken certain forms. Bernstein's concern is with the fundamental problem of persistence and change in the social structure. Language is the principle means of cultural transmission; but if we seek to understand how it functions in this role, it is not enough just to point up odd instances of the reflection of general sociological categories in this or that invented or recorded utterance. An approach to this question presupposes not only a theory of social structure but also a theory of linguistic structure—and hence may lead to further insights into the nature of language, by virtue of the perspective which it imposes. The perspective is a 'socio-semantic' one, where the emphasis is on function rather than on structure; where no distinction is made between language and language behaviour; and where the central notion is something like that of 'meaning potential'—what the speaker 'can mean', with what he 'can say' seen as a realization of it.

Preoccupations of a sociological kind, which as was pointed out at the beginning have for a long time held a place in linguistic studies, assume a greater significance in the light of work such as Bernstein's: not only because Bernstein's social theory is based on a concern with language as the essential factor in cultural transmission, but also because it has far-reaching implications for the nature of language itself. And these, in turn, are very relevant to the educational problems from which Bernstein started. Bernstein has shown the structural relationship between language, the socialization process, and education; it is to be expected, therefore, that there will be consequences, for educational theory and practice, deriving from the perspective on language that his work provides. Some concept of the social functioning of language must in any case always underlie the approach of the school towards its responsibility for the pupil's success in his mother tongue.

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LANGUAGE AND MEANING

A Study of Adolescents and Young Adults

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I DO not need to elaborate upon the theme of the importance of language in the production of ideas and meanings during secondary and higher education. But I may remind readers that although many of the basic language-thought mechanisms which emerge during childhood have been extensively discussed and investigated, relatively little has been done with older age groups. There is much of interest to be extracted from a study of such older pupils and students. The topics of meaning, concept formation, understanding and judgment, evaluation and creative use of English may all be fruitfully explored.

In this paper I propose to survey and discuss briefly ideas and studies in the psycho-linguistics of meaning. Different meanings emerge both from the *practice* of language and from *thinking* associated with it which reveal differences and possibly developments during and after adolescence.

First, a word about the main principle underlying both the theorising and the research technique which forms the basis of our discussion. It has been to think about and produce a verbal situation involving nonsense syllables, words, sentences or paragraphs, open in that it provides the subject with fairly unrestricted opportunity to reveal his meanings, to construct his ideas and make his judgments, evaluations and creations. This sometimes means that qualitative differences or responses have to be recognised, graded, and agreed upon by judges, but the gain in more revealing replies is most valuable for it takes account of the structural quality of the language-thought processes. The somewhat open test paragraph, sentence, or word list with accompanying verbal preparation is itself a structure, comprehension of which reveals the deeper, wider structure in the cognitive life of the person tested.

Readers acquainted with the interest among contemporary linguistics, anthropologists and sociologists, in structural and holistic modes of theorising and investigation (Piaget, 1970; Lane, 1970), will realise that much of what follows fits well into this topical scene. The recognition of structure has been a part of psychological theory and practice for a long time, first by the Gestalt psychologists and later more fully and penetratively by Piaget.

The Geneva use of the concept of structure in explaining thought (Inhelder & Piaget, 1959) includes the basic notions of holism, transformation, and homeostasis. But Piaget does not fall into the trap of assuming that ready made structures appear *ab initio*. They emerge with experience and even in adolescence there is still plenty of scope for further structural development in cognition. Meaning is essentially a structural phenomenon, for it may be constructed out of many parts and relations in the language-thought whole.

Discussion of meaning in relation to language tends to get shelved by educationalists and others writing about cognitive processes in the school setting. This appears strange since the experience of meaning by the pupil is something the teacher tries to promote and utilise. The apparent lack of interest may have several causes.

First the word is unpopular because it has longstanding connections with the 'idea' of an object—as something existing *a priori* and outside the learner's mental life. But the dualism between word and idea disappears if we hold the view that learning is construction and that the only difference between learning and thinking is in the degree of control exercised by the speaker over his own utterances.

Secondly, meaning in language is too often assumed to be merely that of reference of a word to an object or other words as in lexicography and translation. This interpretation is patently so incomplete in foreign language learning that the whole concept tends to be rejected.

Thirdly, the concept of meaning as a primary feature of mental life, irreducible to other simpler psychological phenomena such as association (Humphrey, 1951), conditioned connections between stimuli or mediation by pure stimulus acts (Hull, 1952) has been rejected on psychological grounds. The educationalist may also be tempted, therefore, to exclude it from his own discussions. This will not do, for educationally the problem is both real and complex.

There are several kinds of meaning and the explanation of each is equally varied. The confusion is increased by the interest of different disciplines in the problem which includes that of philosophy, general linguistics, psychology, sociology and education.

Prominent among English specialists are Ogden and Richards who wrote in the vein of association psychology and were concerned with referent-meaning, and Firth (1958) the most positive advocate of the idea of poetic meaning and also vigorous in insisting upon the inclusion of the study of meaning in language research. Among psychologists we may note the unique theoretical and experimental contribution of Osgood, Suci and Tannenbaum (1957) in their analysis of general meaning into the three dimensions of: value, potency and movement.

Educational studies of meaning in English are not numerous. My own inquiries (Peel, 1962) on word learning, to be mentioned later, started from a psychological standpoint, but were developed to include the learning of foreign language vocabulary (Luckman, 1964). This work was restricted to word learning (and nonsense syllables) which, however, was related to the learner's language and thought structures. The aim was to promote certain structures and then to see how far they affected verbal learning.

Before I consider obvious interpretations of the word 'meaning' I can demonstrate to the reader how the semantic element, shown in the attitudes held and meanings constructed by the thinker, is reflected in sentence test material, designed primarily to elude syntactic idiosyncracies.

The purpose was to investigate grammatical peculiarities, not necessarily inaccuracies, which might be used by people having English as a second language. They were given a set of incomplete sentences which they had to fill in. The missing parts were so chosen that the blank spaces allowed some degree of freedom in the insertion of the completing material. One of the tests was as follows:

Task: Complete the following sentence by inserting two words in the place provided:

At the end of the visit, because the children were hungry and tired we make them wash their hands before eating.

Although it was intended to test syntactical oddities, the first thing we noted was that there are two broad classes of reply, which show that the subjects started off from two opposing *attitudes* about hunger and cleanliness. The sentence reflected these meanings. There were people who put hunger before cleanliness and those who put cleanliness before hunger. Those people who put hunger before cleanliness provided a preponderance of 'did not' answers (mainly among native English speakers) and those who put cleanliness before hunger gave a preponderance of 'had to' answers (mainly among people with English as a second language). This is a psychological or semantic

element which has to be cleared away before we can look at the answers structurally. We see that any attempt to make a syntactical analysis of connected English will require also some combination with semantic analysis.

Psychologically, meanings can be said to begin when the thinker has any mental structure at all into which the new experience can be assimilated and which structure itself in the process may become accommodated to the new experience. Meanings, then, are instances of what Piaget calls equilibration. This suggests that we must widen the concept of meaning far beyond that of ideational reference. Thus it can include clang or phonetic likeness, orthographical similarity, unusual, linguistic, metaphorical shapes and structural or syntactic patterns. Even when we see meanings as having mainly a referent significance, we may usefully distinguish between a simple sign-significate connection, and a richer conceptual meaning which takes account of the fact that a single sign and a single significate may each be a part of a wider matrix of related signs or significates.

Thus our account of meanings has to provide for clang (homophonic) and orthographic similarity, unusual juxtaposition of words and ideas, metaphor, Times Crossword clues, sign-significate reference, conceptual meaning, syntactic patterns and contextual meaning.

(a) *Poetic Meaning*

Let us first analyse the meanings which words acquire by their phonetic and phonological qualities and which phrases acquire by virtue of the imaginative juxtapositioning of words, as in the metaphor. We may call this poetic meaning. Firth (op. cit.) gave the best single account where on page 192 he set forth his overall view as follows:

'To make statements of meanings in terms of linguistics, we may accept the language event as a whole and then deal with it at various levels, sometimes in a descending order, beginning with social context and proceeding through syntax and vocabulary to phonology, and even phonetics, and at other times in the opposite order, which will be adopted here since the main purpose is the exposition of linguistics as a discipline and technique for the statement of meanings without reference to such dualisms and dichotomies as word and idea, overt expression and overt concepts, language and thought, subject and object.'

Firth does not deny the concept of mind but he is not concerned with referent meaning nor with contextual meaning but with the meanings associated at the lowest levels with sounds. To quote him: (op. cit. p. 193)

'Whenever a man speaks, he speaks in some sense as poet. Poets have often emphasised that a great deal of the beauty and meaning of the language is in the sound of it.'

and further (op. cit. p. 194)

'Alliteration, assonance and the chiming of what are usually called consonants are common prosodic features of speech, and from the phonological point of view can be considered as markers or signals of word-structure or of the word process in the sentence.'

This he called the prosodic mode of meaning and is a feature of good dialogue in contemporary drama and other forms of prose. Such might be the use of the consonant digrams.

CR in *crash, crack, crumble*

SL in *sliding, slithery, slippery, slush*

This interest by linguists in the semantic power of sounds is matched at a more behaviouristic level by psychologists' attempts to discover whether a clang (homophonic) preparation is more or less effective than a meaningful preparation (by synonyms) for the subsequent learning of lists of words and nonsense syllables. The idea for such experiments followed from the behaviorist concept of primary (homophonic) and secondary (mediated) stimulus generalisation. Thus Cofer and Foley (1945) tested five matched groups of 25 learners respectively with a list of ten words, after each group had been presented with four readings of a list of homophones, a second list of homophones, a list of synonyms, a second list of synonyms of the first synonyms and a control list of 10 independent words. The 10 words lists included the two following words:

Test Words	PREPARATIONS				
	Homonyms I	Homonyms II	Synonyms	Synonyms of Synonyms	Control List
pear	pare	pair	fruit	result	palm
right	write	rite	just	barely	very

The results were as follows and appear to suggest that homophonic was more effective than ideational preparation.

RESULTS

	Mean recall of words in test list
1st Homophone Group (best homophones)	6.72
2nd Homophone Group	5.64
Synonyms Group	5.88
Synonyms of synonyms Group	5.24
Control Group	4.80

Other results showed the opposite tendency, so the state of knowledge was far from clear. These earlier attempts could be faulted as experiments. But for me they neglected the important variable of age. It is common educational experience to find that children and younger adolescents learn new words in the mother tongue and in foreign languages more easily by clang rhyming than by semantic connections. Older people on the other hand may find semantic associations more helpful. I am using semantic here in its referent connotation.

It is possible to test how far a referent or semantic connection as opposed to homophonic association aids the learning of new material. In one experiment (Peel, 1962) a list of 10 nonsense syllables, once presented, formed the learning task. Before the list was run through, each nonsense syllable was linked with other nonsense syllables and words. The groups of children and students so prepared were chosen at random. Each received four presentations of the list to be learned, (the subjects did not know that this was to be the learning list) with the particular nonsense syllables or words paired with the list.

Thus NAR and GOM were two of the 10 nonsense syllables to be learned and their preparation were as follows:

Group 1.	VOK-NAR	LEK-GOM	<i>Nature of preparation</i> control clang N.S. word, semantic or referent clang word
Group 2.	VAR-NAR	LOM-GOM	
Group 3.	dress-NAR	church-GOM	
Group 4.	car-NAR	Tom-GOM	

The four different preparations of connections were tried with 300 training college students in randomly selected groups of 75 each, and 200 secondary modern school pupils in groups of 50 with the following results:

	Group 1	Group 2	Group 3	Group 4	n each group
	Mean number of correct responses				
Training College Students	Control	Word	Clang NS	Clang word	
	6.0	6.4	5.5	5.8	75
School Pupils	Control	Word	Clang NS	Clang word	
	3.9	3.9	4.3	3.9	50

The differences which are statistically significant show that semantic connections help the maturer learner whilst the clang connections appear to inhibit him. On the other hand the school pupils appear to

be helped by clang association meaning appears to exercise little if any influence.

Returning to poetic meaning, Firth drew attention at a higher level to the effect of putting together of words not usually associated with each other. This is meaning by collocation and, we are told, is not to be confused with contextual meaning. It is indeed a creative metaphorical and not a generic extension of the meaning of the terms put together: *spent night, joyful morn.*

Firth also cites Swinburne's lines:

Welling water's winsome word,

Wind in warm weather,

to demonstrate the power of the initial *w* as promoting these senses of meaning. It also illustrates his point that phonological meaning is not capable of translation into another language. His extension of the idea of collocative meaning to include the association of synonyms, antonyms, contraries and complementary couples in one collocation, takes the concept into the realms of ideas and values. This is very evident in Pope's poetry.

'Most strength the moving principle requires;

Active its task, it prompts, impels, inspires.

Sedate and quiet the comparing lies,

Formed but to check, deliberate, and advise.'

One can sense here the phonological meaning in the propelling p . . . p p. of the second line followed by the halt sign *sedate* and rounding off in the slower tempo of the *ds* of the last line, all being integrated by the pentameter rhythm.

The highest level of collocative meaning is revealed in the situation where there is speaker (or writer) and audience (or reader) each of whom, to use a behaviorist term, reinforces the actions of the other by persuading and convincing verbal forms. This collocative language comes into being as a result of the frequent occurrence of hitherto unused combinations of words and their consequent acceptance in the language. This collocation may be of several origins, as for example, idiomatic, or metaphorical.

it makes no matter

there is nothing in it

as well as its clear-cut issues

London proposes, Paris coy

These are meanings which stem from the effective use of language in itself as it were, and without reference to the meaning of words in the ordinary semantic sense. This use of language can be made at

different levels, phonetic, phonological, prosodic and collocative—in poetry and in the social situations where a speaker is trying to influence his audience within the setting of their common society.

In broad terms the type of meaning discussed so far justifies the name of poetic meaning. Its experience has an essential aesthetic quality and making a pupil sensitive to it is an important aim in teaching literature, drama and poetry.

Where should we put the peculiar phonological fragmentations and lexical collocations which make up 'Times' crossword clues such as:

Clue

Lucy Aston and Catharine Glover,
we hear, for instance.

Meaning power of attorney

Spanish royal is east, understand.

Hug me back and get two!

Solution

Scotswomen

Significant

Realise (Real is E)

Embrace (Me reversed brace)

These nearly resemble collocative grouping, and call for a play with words whose first rule is that the solver should not take any sequence of words or sounds in their normal structured or contextual setting. The solver must look for other groupings and meanings. Such meanings are not strictly speaking poetic and metaphorical but they arise in collocations which are not the usual ones making up accepted English phrases and sentences.

(b) *Referent versus Syntactic Meaning*

In its wider educational setting meaning has the qualities suggested in the theory of signs, which suggests (Morris, 1956, p. 217) that a sign functions semantically, pragmatically and syntactically. Semantic meaning is the usual referent meaning of sign to significate. The latter may be an object, word, class, relation, operation etc. as for example, word APPLE—fruit apple, russian *louk*—English *onion*, n = number of beans, \div is dividing. Such hooking up of signs forms a large part of early learning in any language.

Pragmatic meaning is more closely linked with the motivation of learning. It links the sign with the purposes and consequences of its significate for its users and experience. Thus the sign *arithmetic* or *school* has a different pragmatic meaning for successful and unsuccessful school pupils. Many politically toned words operate in this way, as for example: *apartheid*, *tory* and *reactionary*.

Syntactic meaning is the relation between a word or symbol and other words or symbols located with it in a sentence or equation. The word *on* takes on different meanings according to the sentences:

On you go! The electricity is on. Put the book on the table.

On departing he thanked his host. Go *on*! You're having me on.

In learning a foreign language syntactic meanings are often much more important than simple semantic meanings. Thus in French we have *in* = *dans*, but, *in the hand* = *à la main*.

The suggestion that words, besides carrying a simple referent meaning, also have a syntactic meaning is capable of experimental testing. The ten nonsense syllables referred to above, NAR, GOM, etc., were also each put into a different sentence as under:

I am fat NAR my wife is lean

In the Summer the woods are GOM.

These sentences were presented four times in random order with the same instructions as given for the other preparations described on p., and then the learning list NAR, GOM was run through once in the same way as in the first experiment.

Two kinds of preparation were compared.

(1) Semantic or referent as, e.g. in dress-NAR, church; GOM.

(2) Syntactic as exemplified in

I am fat NAR my wife is lean.

The comparison was carried out with two groups of subjects; secondary modern school pupils in their first and fourth years, mean ages $11\frac{1}{2}$ and $14\frac{1}{2}$ years respectively.

In the first experiment the pupils within each age group were divided on the basis of equal scores on a buffer test for the two kinds of preparation: semantic and syntactic.

	Score on a prelim. buffer list of 8 words (STEM)	Score on the NAR-list of 10 NSs	n
<i>1st year</i>			
Semantic preparation			
Dress-NAR	4.2	3.5	51
Syntactic preparation			
I am fat NAR my wife is lean	4.2	3.2	45
<i>4th year</i>			
Dress-NAR	5.0	5.1	40
I am fat NAR my wife is lean	5.0	5.3	40

There is a slight but not statistically significant trend towards a greater effect of syntactic preparation with older pupils. More might be done along these lines.

(c) *Conceptual Meaning*

The four kinds of meaning so far discussed: poetic, semantic or referent, pragmatic and syntactic, do not, however, account for all that we observe in the effectiveness of meaning in school learning. For instance, the following extract from a Latin vocabulary revision session reveals something more than the influence merely of referent meaning.

Teacher: What does *existimo* mean?

Pupil: I exist.

Teacher: Wrong, I judge, value or appraise from *ex* and *aestimo*—I estimate.

Here an incorrect meaning is constructed from a false generalisation *existimo*-exist. Also the correct meaning is substituted and supported by a valid generalisation *aestimo* + *ex*, estimate, etc.

It is quite easy to demonstrate the difference between this learning in which the response forms a member of an extended class and that in which it is merely a single referent. Under certain conditions foreign words like *stein*, *kirche*, *louk* (Russian onion), each of which fits into the learners' existing repertoires of responses,

Stein—stone, stane, rock, quarry

Kirche, *kirk*, church, chapel, cathedral

Louk—leek, onion, shallot, are more easily recorded and retained than those which have no obvious classes to join. Such may be *sad* (garden)—we assume the learner is naive enough not to connect *sad* with the English *sed*—words of Latin, *sedere*—connection. A garden in Russian is where one puts down (seats) seeds—or *Chleb* (bread) from Russian.

A simple experiment with adult learners demonstrates the power of conceptual meaning and also the importance of the direction of the learning. Forty made-up words were put in a list with their English equivalent. Half of the 40 pairs of words were chosen so that a meaningful association was suggested, as, for example, in the pairs:

wall steyn

violin skreepon

whereas as far as could be ascertained the other 20 items were composed of pairs of words not so obviously associated, such as

picture kuplo
knowledge vardin

Similarly in the test of 20 items, 10 items consisted of closely connected pairs and 10 of less obviously connected pairs. These associations are called strong and weak respectively.

In order to test the effect of direction, the same test was presented in two forms, one requiring a translation from English to the 'new language' and the other requiring the reverse order of translation. An adjustment has to be made to allow for spelling mistakes in the new words. Spelling mistakes would be made only very rarely in giving English words, but might occur quite frequently in giving words in the 'new language'.

The results were calculated as mean scores for each of the two groups of people tested.

TABLE OF MEAN CORRECT SCORES
(Maximum 10)

Testing	Period	Group A: Recall Learning	Group B: Recognition Learning	Strong	Weak
		Translating English to New Language allowing up to 3 spelling errors if the right word had been chosen	Translating the New Language to English		
1st	immediate	5.3 (4.0)*	1.4 (0.9)	6.3	2.5
2nd	after 15 mins.	6.7 (5.4)	3.1 (2.2)	7.8	4.4
3rd	" 1 week	5.2 (4.1)	1.5 (1.0)	7.7	3.3
4th	" 1 month	5.5 (4.0)	2.1 (1.3)	7.4	3.0
5th	" 3 months	5.3 (4.0)	1.3 (0.9)	2.7	6.9

* These are the mean scores from answers spelled completely correctly.
Note:— The figures in the brackets refer to mean score when correct spelling was insisted upon.

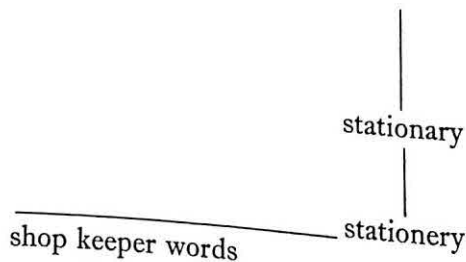
If the pairs of columns marked strong and weak are compared, it is clear that the strong connections are more readily learned, in the 1st and 2nd tests, and retained, in the 3rd, 4th and 5th tests. In all, this evidence supports the view that 'meaning' contributes to more efficient learning of paired associates, but modern language

learning entails of course far more than the acquisition of vocabulary, essential as this is. When a pupil first learns a new word in a foreign language, say PUT in Russian meaning WAY, ROAD or ORBIT he will best do no more than tie PUT to his picture or experience of WAY at the barest level of a contact word (Skinner's tact). Next PUT will become an indication word *PUT is a way*. At this stage PUT has referent or semantic meaning. When, however, the pupil begins to learn that *puteshestbye* means journey, *Sputnik* means fellow-traveller, or Satellite, that *Rasputin* was allegedly so named because he deviated from the straight and narrow way, that is because he was dissolute, then PUT takes on a richer meaning for the learner. The essence of this meaning is that of a *relationship between the sign PUT and the signs puteshestbye, sputnik, Rasputin of similar significates*. For this reason we could well call it *conceptual meaning*. We may note here that it is not the same thing as *syntactic meaning*.

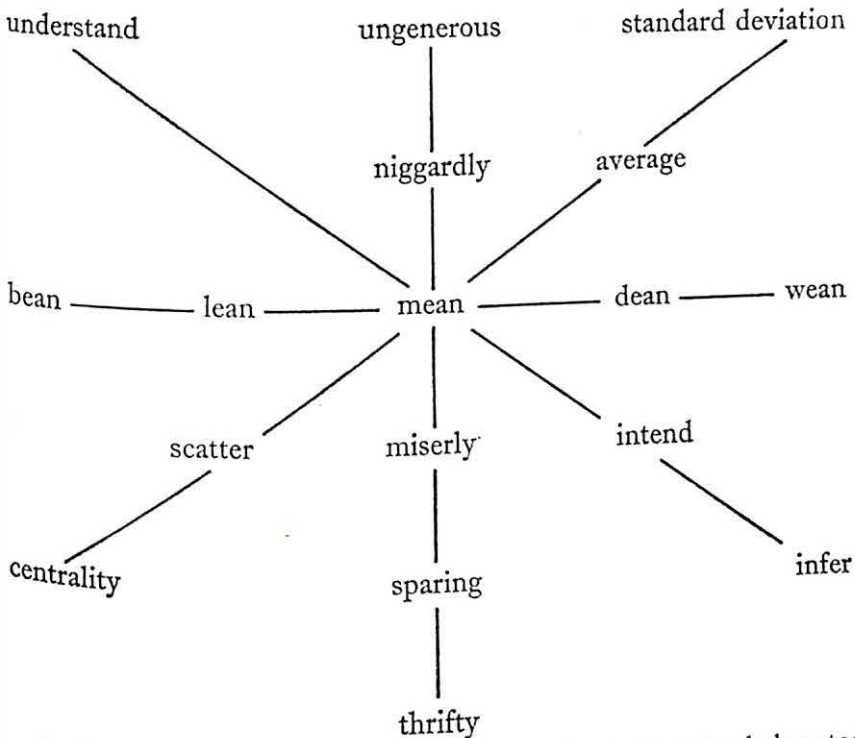
We can use this idea of conceptual meaning to help distinguish between pairs of words which may be confused.

- (a) stationary—adjective ending—ary
stationery—stationer—grocer winery (USA)—grocery, etc.
- (b) fewest—few many *number*
least—little less *size*
- (c) kirche—kyriake (of the Lord), kirk, church (no s)
kirsche—kerasos, cerasus, cerise—cherry
(s dropped in error, compare pea from pois, from the erroneous belief that the 's' was a plural marker).

When we do this it suggests that the distinguishing generalisations or classes are orthogonal to the confusing ones



Since they direct the learning we may call them *vectors*. If we admit orthogonal vectors why not others at various angles. A word is now seen to be a crossing point of various vectors, its meaning being carried in each vector. The



So far our progress from conceptual meaning to an extended vector theory of meaning has been speculative. How does it stand up to objective experiment? We may attempt such an experiment by first presenting lists of words bearing on some of the words to be finally learned, the former being studied and even learned prior to the giving of the second list of test words. We could use both primary or homophonic lists and secondary or meaningful lists. For example, a test list consisted of the words *ton, rib, den, cup, bag, pin, rod, gun, pad, met*, of which the word *cup* is regarded as the key word. Two groups of preparatory thinking lists were given, one consisting of the words, *rub, hug, mud, but, pun* being the instances of primary generalisations and the other list consisting of the words, *beaker, saucer, glass, tumbler, tankard*. The control group of subjects had the preparatory list *god, dun, set, pod, kin*. After giving the preparatory list we then give the test list and count the frequencies of a correct cup response. With College students the *beaker* preparation list was more effective than both the homophone list and the control list. The homophone list showed no improvement on the control list. This would seem to suggest that with the mature students, a meaningful preparatory list does aid the

A later experiment where an artificial vocabulary of nine words was built up from the six letters, A, I, K, P, R, S, as for example, Hospital—SIKPRA and branch—SAPIRK was carried out, in which the effects of two conceptual meaning lists:

List A: *poorly, doctor, sickness, nurse, sick* (medical)

List B: *tree, leaf, sapling, twig, sap* (arboreal)

were presented prior to the learning of the artificial vocabulary. It was found that College students responded to the meaningful lists, whereas secondary school pupils showed no evidence of such response.

From this experiment there appears to be some support to the idea of conceptual meaning as something in addition to *semantic* and *syntactic* meaning and *homophonic* and *orthographic* similarity.

These are all psychologically similar phenomena but they manifest themselves in different degrees according to the age and maturity of the learner. A feasible sequence by age would seem to be homophonic similarity, semantic meaning, syntactic meaning, and finally conceptual meaning. Such a view would also be supported at various points by the work of other investigators using both direct learning and conditioned responses as measures of the effects of meaning and similarity.

(d) *Meaning from Context*

Lastly we turn to the comprehension of meaning from context. Often a new term, strange in its appearance, is introduced in a piece of text. The meaning of the new term has to be constructed from the context in which it is embedded. Linguistic and logical cues help in this mental act, and all the types of meaning so far outlined could enter into the process. Recently De Silva (1969) made an interesting attempt to discover what psychological and logical elements in the whole test situation contributed to the construction of the meaning of a single term in context. He was more concerned with thoughts and their development processes but the technique could well be applied also with linguistic structures in mind.

De Silva used material from secondary school history texts and coded in the test word, whose meaning was to be constructed, by an unknown word. The pupils came from five years in a comprehensive school. He chose ten history concept words in context, of which *monopoly*, coded by KOHILAK was one:

'KOHILAK (*Monopoly*)

The East India Company was the first and the greatest of the companies which was to play a leading part in the development of the British Empire.

Financed chiefly by the City merchants, it held a virtual *kohilak* of trade with India, and was frequently accused of having too restrictive an outlook. Yet for many years it was the only source of capital for English enterprises in India, owned or chartered ships which carried goods to and fro, and made arrangements to market them at their own destination.'

The subjects were asked 'What is KOHILAK? Why do you think so?' He was able to categorise the answers into the following four classes beginning with the least and ending with the most mature.

1. *Logically restricted*—'these immature responses are not oriented to reality but are tautological, inconsistent, directly contradictory, irrelevant or otherwise irrational and display a gross lack of comprehension of the passage.'
2. *Circumstantial Conceptualisation*—'This form of signification is characterised by attempted analysis in terms of one aspect of the presented data and failure to grasp the essential features of the problem.'
3. *Logical Possibilities*—'In this category of response subjects engage in realistic appraisal showing capacity to combine two or more pieces of evidence and ability to relate cause and effect.'
4. *Deductive Conceptualisation*—'In responses falling within this category the subject generally explores the content of the passage in almost its entirety in a deductive way and draws integrated, reasoned, penetrating and imagined inference.'

The preparation of answers made in the different categories set against the ages of the subjects was as follows:

Age	Percentages of Frequency				
	12	13	14	15	16
No Response	4.0	3.5	6.5	9.5	5.5
Limited Response	71.0	68.8	63.0	47.0	40.0
Circumstantial Conceptualisation	10.0	9.3	10.5	15.5	16.5
Logical Possibility	4.5	6.0	4.3	8.8	3.5
Deductive Conceptualisation	10.5	12.5	15.8	19.0	34.5

From the above table it is apparent that only in mid-adolescence and beyond does one get marked evidence of the use of the whole logical structure of the textual material available. An interesting investigation would be where one could use the same broad mode of attack combined with an analysis of the answers in terms of the linguistic terms characteristic of the passages. This would, of course, necessitate the choice probably of differently structured passage material.

I have set out some half dozen different sources of the meaning of any word or phrase; phonological, collocative, referent, pragmatic, syntactic and conceptual. These different conceptions of meaning

are not mutually exclusive and in some degree all may contribute to the meaning of any particular word or phrase. However, some may be more dominant at different levels of intellectual and linguistic maturity than others. In general conceptual meaning is a feature of later adolescence. Phonological meaning may have greater significance for the young learner of language. The one important value of the concept of collocative meaning is that it shows that any novel lexical combination brings about a new meaning. In a way referent meaning is a special case of collocation and since often it is not two words which are collocated, but word and object, such meaning comes to have a sort of objectivity which obscures the original arbitrary pairing. Hence we tend to get a separation of word and thought and a failure to recall that all meaning originates in language usage.

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WHAT'S THE USE?

A Schematic Account of Language Functions

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I. A PRELIMINARY NOTE

WE shall be concerned in this article with the functions of extended discourse—a text or a piece of extended speech (not excluding dialogue). Thus, the notion of an overall function, a function that dominates in a hierarchy of functions, must be kept in mind.

We shall be concerned with 'typical function': necessarily so if we are to face up to the distressing facts that a speaker may have hidden and devious intentions in making himself heard; that he may fail to do what he intended; that the effect of an utterance may differ for each member of an audience; and that an utterance may set up a chain of consequences with no determinable cut-off point.

Our salvation lies in the notion of 'context' as Lyons has interpreted it:

I consider that the idea of context as 'universe of discourse' (in Urban's sense) should be incorporated in any linguistic theory of meaning. Under this head I include the conventions and pre-suppositions maintained by 'the mutual acknowledgement of communicating subjects' in the particular type of linguistic behaviour (telling a story, philosophizing, buying and selling, praying, writing a novel, etc.). . . (Lyons, 1963, pp 83-84).

Thus 'the conventions and presuppositions maintained by the mutual acknowledgement of communicating subjects' provide a mature speaker or writer with a repertoire of known choices of function within our culture, and enable a mature listener or reader to recognize which choice has been made.

The rules of the game operate within 'the mutual acknowledgement of communicating subjects' and are therefore open to change. If advertisers, for example, insist on writing what seem to be fragments of autobiography for the purpose of selling tours, additional rules come to be written in.

2. THE PROCESS OF REPRESENTATION.

Some of the things we say suggest that we may use words to support more general ways of classifying or representing experience: more general and perhaps more elementary ways. Thus (as has often been noticed) we speak of 'sinking into despair' and 'rising to the height of our ambitions'; we 'fall into disfavour' and 'rise to an occasion', and we call education 'a ladder'. It seems likely that some general spatial sense of height and depth constitutes a non-verbal mode of classifying, and that this underlies the habits of speech by which the things we aspire to or strive for are located 'up above', while the things we shun or are at the mercy of are located 'down below'. (When we speak of 'the height of folly' or 'the height of the ridiculous', we are probably mocking some instance by giving it, so to speak, a prize—a booby prize.)

Certainly language, as a way of representing the world, is inextricably interwoven with other forms of representation. My example was trivial, but the statement is crucial, and takes us on to an even more important hypothesis, that what distinguishes man from the other animals is not language *per se*, but the whole process of representation.

It is the process of representation that makes a man's view of the world (if we interpret behaviour aright) so vastly different from that of the other animals who live in it with him. Indeed, to speak of an animal's 'view of the world' at all is probably misleading; whereas man's every response to the environment is likely to be mediated by his total view of the world as he knows it. By symbolising, by representing to himself the world as he experiences it, man creates, as Cassirer is right, a retrospect which by projection gives him also a prospect. (Cassirer, 1946, p. 38). In the human world, the here-and-now is set in a rich context, a world constructed of experience derived from elsewhere and other times. In such a world, what goes away may be expected to come back, 'out of sight' does not mean 'out of mind', change need not be kaleidoscopic, and very little that happens to us will be wholly unforeseen.

I have laboured the point because I want to suggest that it is typically human to be insistently preoccupied with this world of representation, this retrospect and prospect a man constructs for himself. It is of immense importance to him, I believe. It is the true theatre of operations since all he does is done in the light of his hopes for the future depend upon its efficacy; and above all

use of who he is and what it is worth for him to be alive in the world derive from it. We might even say that he is more preoccupied with it than he is with the moment by moment interaction with environment that constitutes his immediate experience. A man's consciousness, in fact, is like the little dog with the brass band: it is for ever running ahead, or dropping back, or trotting alongside, while the procession of actual events moves steadily on.

Our world representation may owe its vividness to sense images and the symbols (however we think of them) that mark emotional categories: for its *organisation* it relies very largely upon language. As we talk about events—present, past or imagined—we shape them in the light of, and incorporate them into, the body of our experience, the total. We may of course fail in our attempt to adjust the corpus and digest the new event: life does sometimes make irreconcilable demands upon all of us. To preserve the order, harmony, unity of our represented world we may ignore the recalcitrant event (or aspect of events); or we may, over a period of time, continue the effort to come to terms with it. Those who too readily ignore disturbing aspects of experience are destined to operate in the actual world by means of a represented world that grows less and less like it: and so the fool has his paradise.

3. THE EXPRESSIVE FUNCTION

If human consciousness is like the little dog with the brass band we may expect to find its volatile nature revealed in a man's expressive speech. Being more or less intimate, unrehearsed, such speech is free to follow the shifting focus of attention, clothing a speaker's pre-occupations the more faithfully because it is committed to no other task, meets no demands but his own, takes for granted a listener's readiness to be interested both in the speaker and his message.

Expressive speech is language close to the speaker: what engages his attention is freely verbalised, and as he presents his view of things, his loaded commentary upon the world, so he also presents himself. Thus, it is above all in expressive speech that we get to know one another, each offering his unique identity and (at our best) offering and accepting both what is common and what differentiates us. Secondly, it is in expressive speech that we are likely to rehearse the growing points of our formulation and analysis of experience. Thus we may suppose that all the important products and projects that have affected human society are likely to have been given their first draft in talk between the originator and someone who was

sufficiently 'in the picture' to hear and consider utterances not yet ready for a wider hearing. Such a listener would ideally concern himself first with the speaker and his thinking, those mental processes that lie behind the utterance; though, having 'understood', he might take account also of the forms of the utterance itself and assist in its modification to suit a wider audience.

But of course our use of expressive speech is not limited to the original and far-reaching. It is our principal means of exchanging opinions, attitudes, beliefs in face-to-face situations. As such, I would judge it to be a far more important instrument for influencing each other and affecting public opinion and social action than any sermon, political speech, pamphlet, manifesto or other public utterance.

'Expressive' is one of the three principal language functions in the scheme I want to outline. It is a scheme that was worked out in the course of classifying some two thousand pieces of written work, in all school subjects, produced by boys and girls of eleven to eighteen, though its application is not confined to the written language. In order to explain the remaining terms, I need to refer back to the general theory with which I began.

4. THE ROLES OF PARTICIPANT AND SPECTATOR

Once we suppose that man operates in the actual world by means of his representation of it, we can see for him an alternative mode of behaviour: he may operate *upon the representation itself* without seeking any direct effect in the actual world. We may in fact see in this formulation a way of describing a great deal of his spontaneous image-making. (Susanne Langer calls man 'a proliferator of images' and postulates a new need not recognized in the other animals, a 'need of symbolization'.) (Langer, 1960, p. 41). These two kinds of behaviour seem to me essentially and interestingly different. (For a fuller discussion see Chapter II in my *Language and Learning*.) 'Operating in the actual world' I want to call 'being in the role of participant': 'operating directly upon the represented world' (improvising upon past experience, for example, or supplying gaps in our picture by drawing upon other people's experiences—but both taken up out of concern for our world picture and not as a means to some end in the actual here-and-now)—this I want to call 'being in the role of spectator'. Contrast Othello telling the story of his life to Desdemona and her father (where all three are in the role of spectator) with a beggar telling a hardluck story to enhance his appeal, or a historian reading a novel, or any other narrative, in order to check on

a point of historical fact (each of them, in pursuing his own current ends through the agency of the narrative being in the role of participant).

To be in the role of spectator is to be concerned with events not now taking place (past events or imagined events), and to be concerned with them *per se* (as an interruption to or a holiday from the march of actual events) and *not as a means to some ongoing transaction with the actual*.

Suppose I recount an interesting experience to a friend—for his entertainment and my own pleasure in doing so. I shall continue to breathe, stand up, sit down, drink maybe, or eat, attend occasionally to what is going on around me—offer him another drink, move nearer the fire if I am cold, answer a child's question, and so on. But mentally I am 'living in the past'—these other things are seen as unattended background to, or interruptions of, what I am principally concerned to do; which is to rehearse in mind an experience that is not now going on, but has been experienced in the past.

What I feel as background or interruption to my spectator role activity is likely to be similarly felt by my listener. In other words, in sharing this past experience with him I induce him also to take up the spectator role. But it is an experience I had, he did not. It follows that I may similarly take up the role of spectator of experiences I have never had—and that, I suggest, is what I do when I read a novel or watch a film, or when I enter into possible future experiences in my day-dreaming.

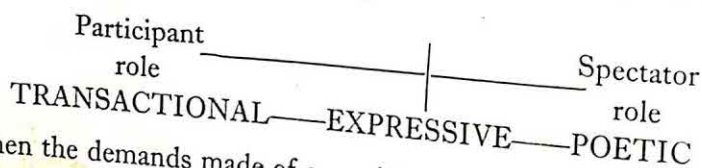
When we use language to get something done, we are in the role of participants—participants in a very general sense in the world's affairs: and, as we have suggested, this must be taken to include the use of language to recount or recreate real or imagined experience in order to inform, or teach, or make plans, or solicit help, or achieve any other practical outcome.

We must note finally that taking up the spectator role does not indicate any lack of involvement in the experiences being recounted: we do indeed 'participate' in the story or the fiction or the dream, but since the events that involve us are distinct from ongoing events, and not subordinated to ongoing events as means to end, this participation does not put us in the role of participant.

4. THE THREE MAIN CATEGORIES

The two roles of participant and spectator are thus seen to represent two different relationships between what is being *said* (or

written or thought) and what is being *done*, and to cover between them all uses of language. We see our three main function categories, Transactional, Expressive and Poetic, related to the two roles as follows:



When the demands made of a participant (in the world's affairs) are at a maximum, we have called the function 'transactional', a term that will need no explaining. Where the use of language in spectator role achieves its fullest satisfactions, we have called the function 'poetic', a term meant to include any example of the verbal arts. The expressive function straddles the participant/spectator distinction, but the dividing line at this mid-point is a shadowy one, and expressive language, as we have seen, is loosely structured, free to fluctuate. Thus, to modify an earlier example, if I recount the story of my recent holiday for your entertainment (and to enjoy it myself in retrospect), the talk is likely to be expressive, in the spectator role. If as you listen you become interested in the place I am describing as a possible holiday trip for yourself, you may ask for information about it—switching to participant role, but probably staying in the expressive. If, however, you pursue this line of enquiry and begin seriously to plan your holiday, your questions, directing my answers, may have the effect of shifting us both into transactional speech. A less likely alternative: if you were to become so interested in my account *as narrative*, and if under your encouragement I warmed to my task of constructing a story (and had the talent to do so), my language might move from the expressive to the poetic function. Finally (lest it appear that the expressive function operates only as a stage *en route* to something else) if as you listen to my talk we warm *to each other*, we may begin to exchange experiences, opinions, evaluations, and—now in spectator role, now in participant—intensify the reciprocal processes of exploring the other and revealing the self that constitute the expressive function of conversational utterance.

5. THE POETIC FUNCTION

D. W. Harding long ago laid the foundations of the theory that associates literature with the role of spectator (Harding, 1937). He saw gossip and the novel as two instances of 'imaginary spectatorship

in a social setting', and suggested that in each a *detached evaluative response* to the possibilities of experience was being offered by the speaker (writer) and invited of the listener (reader). 'The result,' he said, 'is a vast extension of the *range of possible human experience* that can be offered socially for contemplation and assessment.' Though as participants we evaluate a situation in order to operate within it, as spectators we are able to relate events *more amply to a broader spectrum of values*. 'Detached and distanced evaluation is sometimes sharper for avoiding the blurrings and bufferings that participant action brings, and the spectator often sees the event in a broader context than the participant can tolerate. To obliterate the effects on a man of the occasions on which he was only an onlooker would be profoundly to change his outlook and values.' (Harding, 1962, p. 136).

To put this point very simply: freed of a participant's need to *act* (to interact socially, to keep his end up, to turn events to his own advantage etc.), a spectator is able to attend more fully and more exclusively to the evaluative processes. I want now to add a new point within the same framework: freed of the necessity for action, a spectator is able to attend more fully to the utterance *as utterance*—that is to say, to its forms of language and to formal features of whatever the language portrays: the pattern of events in a narrative; the configuration of an idea or a theory; and, above all, the pattern of feelings evoked—the rise and fall of emotional tension, the succession of love, hate, anger, fear, relief, pity that may attend his response to the experiences portrayed. I say 'above all' because I believe Harding's view of the detached evaluative response may be enhanced by recognizing that the effect of feeling upon a participant has this marked difference from its effect upon a spectator. As we participate in events, feeling seems to operate primarily as a spur to action: we might even say that it discharges itself in action. As spectators, we hold it to savour it; and as we read on (or listen, or speak, or write), to savour not simply an emotion but the formal design created by a complex of emotions dynamically related.

If gossip and the novel are linked as exemplars of language in the spectator role, they are differentiated in the degree to which they realise the opportunities for formal organisation. In our terms, most gossip will be expressive in function (as will be also the loosely autobiographical written narratives of the English lesson): the novel, the play, the poem, on the other hand, take on the poetic function in so far as they achieve the necessary degree of formal organisation,

literature all we shall need to say, or want to say, will probably be said in classifying them as 'Poetic'.

As far as satire is concerned, our claim that the poetic function should rank as primary is perhaps somewhat encouraged by the consideration that most of the satires that continue to be read concern themselves with causes which, if not lost, are at least won.

9. SUB-CATEGORIES OF THE INFORMATIVE

Of the many possible ways of subdividing informative uses of language, we have chosen one based on James Moffett's analysis of the relation between a speaker and his topic: between the 'I' and the 'it', where 'I', 'you' and 'it' represent the three components of a communication situation. (Moffett, 1968). He calls his analysis 'an abstractive scale', and sees it as operating in close interconnexion with a 'rhetorical scale' representing the range of relations between the 'I' and the 'you'. He marks off four positions on his abstractive scale, moving from the least to the most abstract, from the 'codification of our world that most nearly reflects the structure of that world to codification that more and more resembles the structure of the mind'. (Moffett, 1968, p. 9). Here, more or less in the form that he gives them, are his four categories:

1. Recording: the drama of what is happening.
Chronologic of perceptual selectivity.
(e.g. an on the spot recording of what is happening before the guillotine.)
2. Reporting: the narrative of what happened.
Chronologic of memory selectivity.
(e.g. an eye-witness account of what happened one day during the French Revolution.)
3. Generalizing: the exposition of what happens.
(e.g. a historical generalisation about the Reign of Terror.)
4. Theorizing: the argumentation of what will, may, happen.
Tautologic of transformation.
(e.g. a political scientist's theory about revolutions.)
(Moffett, 1968, pp 34, 35 and 47.)

Having acknowledged a substantial debt (which will become obvious), I shall leave Moffett's account in bare outline and go into greater detail in explaining the modified form of scale we have used to subdivide our informative category.

But first to make a more general point: Moffett in fact applies his scale to all forms of discourse: we have used it where it seemed focal, where it systematized observed differences between utterances that seemed important. The relation between a speaker and his topic is likely to be crucial in the informative category, which is after all the category Jakobson called 'the referential function' and which he defined as 'focus upon the topic'. (See Sebeok, 1960, p. 357). The scale might be applied to expressive discourse, but would not add a great deal of information, or to conative discourse, but somewhat irrelevantly. To apply it to poetic discourse would, I suspect, be to introduce an alien concept (and our notion of global contextualisation will suggest reasons).

Basing our requirements on the data to be classified—the two thousand scripts collected from secondary schools—we finally introduced three transitional categories, making seven out of Moffett's four.

(i) *Record*. The speaker records what is going on *here and now*, and/or describes what is to be observed here and now. (Compare what is often called 'running commentary'.) The principle of organisation is chronological or 'spatial' (qualitative, descriptive).

We have made the assumption that the prerequisite classifying processes are no more demanding if one says, 'The policeman's coat is blue with silver buttons' than if one says, 'The policeman is shouting and waving his baton': i.e. that *describing* is not *per se* a generalising activity and thus related to the analogic in a way *narrating* is not.

(ii) *Report*. The speaker reports what went on or what was to be observed on a particular occasion at a particular place. The principle of organisation is, again, chronological/spatial. Note that the speaker, since he takes up a retrospective stance, has a basis of selection not available to the speaker of *record*.

Some historical statements are in this category since they deal with directly observable events: e.g. 'In May 1836 an exploring expedition led by the surveyor-general attacked a party of aborigines killing seven and wounding four.' But more commonly, historical statements are generalisations based upon scattered observations and observations over a period of time: e.g. 'The record of relations between the settlers and the natives was an unhappy one.' Such statements, in themselves, are *analogic* (Category (v)). However, isolated sentences of either type are likely to be embedded in a text that contains both types: classification will in any case be in accordance with what

seems to be dominant, and in this particular case a balance of analogic statements with related statements of report is likely to be characteristic of the best analogic discourse.

(iii) *Generalised narrative or descriptive information.* The speaker reports what goes on (or used to go on) habitually, or what might be, or have been, habitually observed over a series of occasions in a series of places. E.g. What we do on Sundays; what coffee-houses were like; how we get our water supply. Classes of events or of 'appearances' are organised on a chronological/spatial principle. This category thus marks the first step towards generalisation, away from the particularity of report.

We include in this sub-category a great deal of everyday informational discourse, discourse in which the speaker generalises from a number of observable events or procedures or concrete situations (e.g. recipes, practical hints, descriptions of simple processes or procedures).

(iv) *Analogic, low level of generalisation.* An arrangement of loosely related and low-level general statements: a concatenation or agglomeration of such statements, for example about the industries of Scotland or the effects of the Thirty Years War. The principle of organisation, is, however, classificatory rather than chronological/spatial.

(v) *Analogic.* This, rather than (iii) or (iv), is Moffett's 'generalizing' category. Here generalisations are made and are related hierarchically or logically: i.e. the principle of organisation is again classificatory, but more rigorously so than in (iv).

A great deal of scientific and historical discourse will come into this category, but it will include any attempt to relate statements on the basis of their respective levels of generality, from whatever areas of experience they may be drawn. E.g. 'The differences are large and variable. Taking an objective view of my parents as the adults I know best, an obvious difference is that I am at school learning, whereas they have left school and work. This means that they bring home the money and I do not. I am dependent on them and responsible to them.'

(vi) *Speculative (Analogic/tautologic).* This is another transitional category that seemed to be required since a great deal of open-ended speculation arises when a speaker makes, is it were, horizontal moves in his thinking—framing general hypotheses on the basis of general propositions—and yet does not reach conclusions which would provide a genuinely theoretical analysis.

(vii) *Tautologic* (Moffett's 'theorizing'). Here the systematic combining of abstract propositions leads to new conclusions, which form a further extension of the system or theory. The basis of organisation is, in a strict sense, *theoretical*.

Though its claim to belong to this category can hardly be sustained on the evidence of one sentence, we judged the school-boy's piece from which this was taken to qualify for inclusion: 'The social life of man is characterised not by virtue of his being a tool-using animal but by virtue of his being a language-generating animal.'

At this point I imagine a reader might be tempted by a common common-sense to ask with me a low-level question: What then becomes of these high-level abstractions? Do they reverberate for ever in a perpetual tautology? And I suppose our answer should be along these lines: that we give them intellectual assent in so far as (1) we accept as valid the steps in thinking by which they were arrived at and (2) they support or strengthen important ideas or beliefs we already hold; and perhaps (3) they modify some lesser beliefs or replace them with ones that fit better into the total edifice: then presumably at some points in the whole network there will be tests applied which show whether the system works in practice, whether it provides reliable guidelines to choice at the level of behaviour.

What is important is to realize, as Moffett points out, that the more abstract processes derive from *and remain dependent on* those at lower levels. Thus, the series of categories from (i) to (vii) has clear developmental implications: to say this, however, is to broach an important aspect of our study which this article cannot attempt to deal with.

10. SUB-CATEGORIES OF THE CONATIVE

We distinguish two sub-categories of the conative, *regulative* and *persuasive*. The regulative represents a direct exercise of influence, and it aims more often at affecting action or behaviour than at changing attitudes, opinions or beliefs. It covers on the one hand simple requests such as 'Pass the mustard', and on the other, rules and instructions issued to those obliged to obey them, and recommendations that carry the weight of authority or the force of a speaker's wishes.

It should be noted that recipe books, and a great many other varieties of technological discourse, may use a conative form, but since their function is informative they are classified in the informative categories.

In ordinarily polite society a request to pass the mustard is not expected to be refused: the regulative utterance is enough. In authority situations those giving the instructions speak in the expectation that they will be obeyed. Persuasive language, the second sub-division of the conative, is employed where no such expectation of compliance operates: usually because it is inappropriate, but sometimes in cases where the expectation has met disappointment, or the speaker has chosen not to invoke it although he might have done. Here the speaker's will is, as it were, diverted into an effort to *work upon* the listener in support of the course of action he recommends, or (more typically perhaps) the opinion, attitude, belief he is putting forward. Thus it is one strategy of persuasive language to foresee and counter possible objections, bringing the weight of logical argument to bear; it is another strategy to work upon a listener's feelings, employing perhaps the wiles of classical rhetoric, whether recognized as such or not.

II. WHAT'S THE USE?

So there it is—the outline of a scheme in progress (an appendix gives the category numbering). If it seems to us rather tenuous at times we take heart from the thought that we shall understand it much better when we have completed a study of the two thousand scripts, and have applied it also to a four-year follow-up study of the school-work of about a hundred eleven-year-olds and a hundred fourteen-year-olds.

We believe it may offer one approach to the consideration of 'language across the curriculum'—an undertaking that must call into question some very general matters concerning teachers' objectives, as well as some very particular ones regarding the diverse linguistic demands made on children as they move from one lesson to another in the day's programme.

Of the general matters, it is the interrelationships of the main categories that interest us most—as well as the *interrelatedness* of the various linguistic demands and achievements. We would hope, for instance, that expressive language may be increasingly seen to play a key role in all learning (even the most subject-oriented) as well as in learning to use language; and that the educational value of spectator role activities may come to be better understood and more convincingly argued. We see such activities indeed as reflecting a concern for 'the compleat man': for it is the corpus of an individual's experience that makes him the person he is; that generates the pluses

and minuses of his fluctuating verdict on the world, his fluctuating acceptance of the human condition, his fluctuating faith in himself. And spectator role activities, across the whole range from expressive to poetic utterance, represent a concern for this corpus.

APPENDIX

1. TRANSACTIONAL — 2. EXPRESSIVE — 3. POETIC

- | | |
|--|-------------------|
| 1.1. Informative | 1.2. Conative |
| 1.1.1. Record | 1.2.1. Regulative |
| 1.1.2. Report | 1.2.2. Persuasive |
| 1.1.3. Generalised
narrative/descriptive
information | |
| 1.1.4. Analogic, low level
of generalisation | |
| 1.1.5. Analogic | |
| 1.1.6. Speculative | |
| 1.1.7. Tautologic | |

- | |
|----------------------|
| 3(1.1). Poet. (Inf.) |
| 3(1.2). Poet. (Con.) |
| 3(2). Poet. (Exp.) |

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THE INTEGRATION OF LANGUAGE AND LITERATURE IN THE ENGLISH CURRICULUM

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1. INTRODUCTION

In this paper I want to argue:

- (a) that the notion 'command of a language' involves linguistic and literary considerations, techniques, theories which are interwoven in an inextricable fashion. Thus
- (b) the teaching of command of a language, and the preparation of teachers to teach it, cannot be adequately informed by separate development of the accepted approaches of language and literature, but only by integration.

In criticism of the shortcomings of established disciplines that play some part in defining the notion 'command of a language' I suggest principally that

- (a) A linguistic approach that takes no account of evaluative considerations opts out of most of the practical problems of language description (by evaluative considerations I mean such things as the aims and intentions of speakers, the effectiveness and the quality of their utterances);
- (b) The literary value of any literary statement is limited by the nature and quality of the language observation implied by it;
- (c) Neither current linguistic theory nor current literary theory have devised hypotheses about linguistic communication that are adequate to explain the phenomenon of command of a language.

I shall then propose two guidelines for the integrated English curriculum.

- (a) In production of language, it should give priority to the functional role of language in the actual accomplishment of communicative tasks;

(b) In reception of language, it should view the process as involving exactly the same skills and techniques as are assumed to operate in the child's first learning of a language.

I shall deduce from these guidelines the following three principles,

(a) There should be maintained a clear distinction between the development of a child's verbal powers in situations which are actual for him, and those in which he plays a role or in which ritual replaces communication.

(b) There should be at least as much attention paid to the features of language which are accidental and arbitrary as to those which are held conventionally to bear meaning;

(c) The motivation to creativity should be exploited in English teaching throughout the process, and not restricted to a few techniques where it serves as a general stimulus to production.

I shall finish with an outline of some of my own work with adults in following these principles.

2. COMMAND OF A LANGUAGE

I regard command of a language as the ability of mature, educated native speakers to exercise full control over their environment by means of their language behaviour. It implies both a high level of achievement and an ability to adapt and develop expressiveness in new situations. There is no attempt here to elucidate this notion fully, but only to draw attention to aspects of it for which the provision in teaching and its source disciplines is incomplete. The notes below will suffice to introduce the problem—and let me emphasise that these are not carefully stored examples from vast experience, but merely notes on humdrum situations in the last few days.

(i) I was babysitting, and as the parents were leaving the three-year-old girl was restive. The mother smiled up at her and said 'Would you like mummy to come up and close your door?' Since I knew the parents were already late I said 'No, off you go; I'll come up and shut your door, Lucy.' The child fled screaming. Apparently, the threat of having her door shut was being used to control the child, but because of my presence the mother replaced her threatening intonation by a normal questioning one, relying on the local meaning of *shut your door* to do the job. I was misled into thinking that it was a desirable action.

(ii) I telephoned a neighbour and was answered by the eight-year-old daughter, who behaved in a very adult fashion. Instead of just asking for her father, I played along with the adult talk and asked her how

busy she was these days, and wasn't it a cold day, and so on. Then I remembered that her younger brother had been ill, and said 'How's Richard today?' She answered 'I don't know. Hang on a minute—Richard, how are you?'

These utterances are all well-formed sentences, but the juxtaposition of them shows failures in the interpretation and evaluation of their function in the discourse. What is intentional selection for the speaker is a matter of weighing the evidence of the sound wave by the listener in his particular situation. In my first story the mother said one thing while hoping to mean another, and was interpreted in both meanings by two listeners; in my second story the girl did not interpret the utterance within the social role she had assumed.

The acquisition of command of a language requires techniques, and techniques are not highly valued in English teaching today. They smack of old-style lessons remembered with contempt because of their failure to achieve their purpose and their lack of motivation on the part of teacher or pupil. The social purpose of language as a highly discriminating communicative instrument is currently divorced from the acquisition of techniques.

In any proposals for the English curriculum, technique must not be handled separately from motivation. Where it happens, expression is inhibited, mistakes are more important than correct work, spontaneity is impossible.

Nor must motivation be separated from technique. There is great emphasis in current English teaching on encouraging expression, particularly imaginative composition; exploring areas of experience with a writing exercise at the end; exposure to, or confrontation with, texts as a stimulus to further texts. There is considerably less concern about exactly how one moves from stimulus to adequate response, or how the free flow of expression can be channelled into competent and elegant production outside the area of literary composition.

These remarks should not be construed as criticism of the attempts of teachers to encourage self-expression in children, genuine creative writing or talking that helps children to develop psychologically, to understand themselves and their own patterns of growth. It will become clear that I propose a considerable extension of creativity without restricting what is already successfully practised.

3. SHORTCOMINGS OF LINGUISTICS IN RELATION TO COMMAND OF A LANGUAGE

In this brief survey I am not attempting to pillory any particular

theory of linguistics, or to deny that gestures are made towards remedies for the deficiencies that I point out. It would be a perfectly fair reply to claim that linguistics is not concerned with actual events in communication or an individual's powers of exercising control over his circumstances through his language. It remains relevant merely to say that many linguists do think their work helpful in language teaching, and so do many language teachers.

(i) Without evoking evaluative considerations, it is not possible to distinguish between a specialised variety of a language which is used to improve the efficiency of a specialised operation, and a jargon, which interferes with communication. Criteria for effectiveness have not been evolved because they would require study of the aims and objectives of particular utterance sequences, and measurement of success and failure (see References).

An English teacher does not need to be told (as he has been told ad nauseam in recent years) that a speaker varies his language to suit the situation in which he is speaking. A teacher derives profit from the studies of language varieties which give details of the variation that is observed. But he is not given adequate hypotheses as to the function of varieties in improving or hindering communication.

(ii) Instead of occupying a central position in linguistic theory, the study of style is relegated to the periphery, again because it must involve value-judgments and consideration of short-term, situation-bound objectives. Its only place is to 'explain' options in a set of formal rules.

Modern linguistics is mainly concerned with one particular kind of choice—the unweighted, compulsory, clear-cut choice between mutually exclusive alternatives. But much of what we call style is the product not of compulsory choice but of optional control over language patterns which do not normally carry meaning at all; deployment of patterns which a grammar or a phonology of English would ignore, in such a way as to invite a speaker of the language to invest them with meaning. These optional choices include most traditional figures of speech, prosodic structures, and an unlimited inventory of relations for which there are no names.

Much of modern linguistics concerns the productive, rather than the receptive, side. One's attention is not drawn to the differences between these two directions of the communicative process, and indeed some descriptive systems are held to be reversible for analysis or synthesis.

The particular role of the producer of the language is the more

complex of the two, and is necessary for the notion of competence—the specialised use of this term to mean the underlying system of structural rules towards which a speaker's usage always tends. But when we think of the producer of language in a particular instance of his production we find of course that he can monitor his own utterances at any stage in their production, and so is in part his listener.

The listener, it is true, may also be involved in productive procedures as part of his interpretation of what he hears, but this is not his most important activity. We can assume that he has at his disposal an accurate representation of the structure of the language, and a set of techniques for putting this internalised competence to work. The basic technique is a learning technique, of the type that he developed when his predominant activity was learning the language. All but a trivial few sentences are new to him and may show features of sounds, syntax, or vocabulary that he has not yet internalised. So even the most primitive strategies of 'looking for meaning-bearing patterning' come into play. A mature and experienced speaker will of course find most of what he hears familiar enough, but the fact that we are affected by stylistic devices demonstrates without doubt the existence of a scanning technique and an interpretative technique to cope with such unpredictable patterning.

'Producer' models obscure this function of a language user. A listener can detect meaning in a degenerate signal or one produced with very doubtful communicative intent, e.g. random selections by a computer from a word-list. 'Receiver' models, with their focal point at the end of the communication process, after communication has taken place, highlight the language user as an unscrambling device as well as a decoding device, quite capable of creating for himself more meaning than was put in by the speaker.

Both models are necessary to make explicit the notion of command of a language. If we take meaning to be primarily a psychological sensation induced in the mind of a listener, it is clear that for the purposes of describing style the receiver model is necessary. (iii) Associated with the point about style above, there is the matter of deviation from strict grammaticality. Modern linguistics has a good deal to say about deviance, what types there are and how the rules of the grammar could be adapted to include them, but the study is abstract in the main and gives us no guide as to how operationally a listener copes with utterances that seem deviant to him. It is not the case that a listener assesses the grammaticalness of an

utterance and rejects it if it does not come up to scratch; nor does he classify its deviance and leave it at that. He interprets it, takes whatever meaning he can find in it (even to the extent of hearing what was not said). He assumes that if he is spoken to, the incoming speech will be meaningful, and his interpretative strategies are dominated by that assumption.

(iv) Also tying in with the previous observations, there is the vexed question of probabilities. Viewed from the position of the producer of language, there seems to be little need for assessing the probabilities of structural choices; the producer, setting out to construct a sentence, prejudices such matters by knowing what he wants to say. All his choices stem from his initial choice of meaningful units.

On the other hand, we are gradually finding out that utterances obey statistical laws despite the free choice of speakers. From the point of view of the listener, the mature and experienced user, the likelihood of a speech event will be an important factor in interpretation, and the perception of stylistic patterning like alliteration, structural parallelism, pun etc. will be informed by, in part, the chances of its occurrence without meaningful intent.

(v) The concentration of linguistic theory and description has always been upon the sentence and its parts. However we define a sentence, it comes out as the highest unit of grammatical organisation and the lowest unit of discourse. In terms of command of the language a full description of sentences and their meanings is merely preliminary to the main problem, which is how sentences are deployed in utterances to construct purposive activity.

It is not *necessary* to adopt a functional approach to sentence structure. Sentences can be viewed as artefacts constructed according to discoverable rules, can be assessed for well-formedness by references to rules, can be compared with each other, used in psycholinguistic experiments etc., etc., without any note being taken of the producer's choice of one sentence rather than another—or even one sentence rather than no sentence at all. But when sentences are considered as actions—actions so subtle and delicate that they make most of our non-verbal activity look impossibly crude—it becomes necessary to see their structure in a different light; to group them in different ways from that suggested by their constructional details.

This regrouping is commonplace in linguistics; within the everyday study of sentences and their meanings several levels are distinguished—with names like phonology, grammar, semantics. The output categories of one level become the input categories of another, and

are grouped according to different principles than those used in their synthesis. Clearly the adequate description of effective language behaviour demands a further level of *discourse*, within which sentences are the primitive units.

4. SHORTCOMINGS OF LITERARY CRITICISM IN RELATION TO COMMAND OF A LANGUAGE

We must first recognise, and press the point, that the literary approach dominates English teaching in our schools, its influence increasing as the child goes up the school. In primary school after initial literacy, the emphasis is on the reading and writing of literary text. In secondary schools what language work is done is perfunctory and ill-understood, and dies out by O level at the latest. This is not to deny that attention is paid to the study of texts in advertising English, political oratory, journalese, etc.—or that a more analytic approach to literary texts is fashionable. But these studies are not linguistic studies; they are centrally concerned with moral, social, aesthetic and other matters, and the language is used merely as evidence.

This distinction is fundamental to my argument. Any scholar can use language as evidence and may very well be obliged to make detailed analytical observations on selected quotations in order to prove his point about archaeology, perhaps, or music or sociology. The literary analyst is no exception. He reads a work and picks out the bits that are appropriate to his point and describes them in a suitable blend of informal structural terminology and critical comment. The only objection that I have to this activity is that it is sometimes said to be linguistic, or language work.

As before, the practice of literary criticism is not being examined in the round, but only as it affects the notion under discussion.

(i) The first point is commonplace but will bear repetition. If literary comment is to be more than exclusively personal testimony it must be interpretable with respect to objective analysis. It is certainly read in this way, and linguistic analysis is sometimes welcomed as a rigorous (if boring and myopic) method of setting out what a critic has intuitively perceived and elegantly stated. The notion command of a language provides a non-personal measure for literary description; it is a generalised notion, laying stress on what is common among speakers, unconcerned to describe individual and personal traits.

This is the point where it may be felt that English teaching is more

than the creation of competent speaker/listeners and writer/readers. The nurture of the individual personality may make rival demands, particularly in difficult or remedial cases. But presumably teachers do their best to resolve conflicting priorities by trying to devise approaches which are doubly useful. It is a major part of my case that within the first lines of development of command of the language there is more than adequate motivation and interest for normal pupils.

(ii) Traditionally, literary expertise is applied to a very restricted range of texts—to not much more than the received corpus of high-quality imaginative fiction. The setting of standards in all non-literary forms has been left to the practitioners themselves, with results that please nobody. The spoken language is ignored. I think that the influence of professional critics throughout our language behaviour is most important to develop for the community as a whole, but most of all for the English classrooms.

(iii) The production and consumption of fictional text is carried out without parallel full understanding of non-fiction. This leads to the creation of a characteristic limbo where literary texts are discussed without reference to their communicative value. To develop this point, it is necessary here to insert a few words about the nature of fiction.

We are obliged to describe sentences in two basically conflicting ways. One observable tendency in natural languages is towards predigestion, shown by the packaging of several words into a single unit of meaning, fossilisation, the creation of multi-word idioms and figures of speech. All these interrupt the tidy analysis or synthesis of grammar and impose arbitrary demands. I group them under the heading of metaphor, or second-stage symbolism.

First stage symbolism, on the other hand, is the normal symbolisation of meaning in regular lexis and grammar. It is the regular procession of word and word, making up phrase and phrase, clause and clause, and finally sentence. The sentences are deemed to be reducible to words, yielding their structural meaning in the process. In this context, I would suggest that fiction is to discourse as metaphor is to sentence.

A special class of metaphor is just one sentence long, and is called proverb, aphorism, epigram and the like. Above the watershed of the sentence the same process gives rise to groups of sentences which are not directly interpreted in relation to the situations in which they are uttered. On the contrary, they are first grouped and interpreted in

respect to an imaginary situation, like metaphors, and then the totality of their meaning is re-interpreted with respect to the outer, actual or real situation. Such groups of sentences make up fiction. The classical term *unity* is the perception of putative boundaries of fictional groups.

If this point of view finds acceptance, it is clear that a model of communication adequate for dealing with fiction must be developed from or alongside one which has thoroughly explored nonfiction. The only special feature of fiction is the relation of the text to the imaginary situation, which is a combination of textual evidence and the readers' cultural assumptions.

5. THE CURRICULUM

From this thumbnail sketch of the inadequacies of linguistic and literary approaches to command of the language, I turn to the implications for the English curriculum. I shall give four examples, the last one extended because it concerns the age group with which I have most direct contact.

In the first place, the complexity of fiction should be noted, and the development of expertise in fiction should not outpace the acquisition of competence in nonfiction. This is not to decry fictional creativity in the early stages of English teaching. I cannot repeat too often that there may well be excellent pedagogical reasons for encouraging it, not examined here. My object is to question its value in improving the child's expressive ability, except in extreme cases. The main dangers are poor quality work, emphasis on mimicry and jargon, and reluctance to perform because of haziness about the communicative status of the task. There is always the alternative of setting up a real, understandable, immediate situation in which the child can operate as a child and produce his own language, develop its potentialities in the same way as he initially acquired his language, and at the same time gain greater insights into the nature of his most powerful possession.

Nowadays we are faced with a flow of impressive fiction produced by children, carefully selected from a much larger sump of worthless pieces. It is a game where only the judges know the rules, and where the child's experience of language, even in the richest background, fits him ill for participation. Accurate, competent fiction requires great technical control, and this fact should not be obscured by the occasional random success. The analogy of the monkey writing

Shakespeare may be insulting, but nonetheless relevant. A 3½ year old child, dead tired, once remarked

When this day is done
Time will fly into the trees
And the clock will bang on the light of the cathedral

As far as one can be dogmatic in such cases, he did not put into that remark what the adults took out of it.

The product of asking children to perform as themselves in real situations is a very keen and functional discourse; full of metaphor and clever strategies, showing the proven ability of a child to make his language useful up to the limits of his nonverbal I.Q. (Coulthard, 1970). And all our current work suggests that there is no lack of motivation, even in difficult and repetitive tasks (Wight and Norris, 1970).

Secondly, the child should be encouraged to pursue his delight in language for its own sake; the quirks and oddities, strange correspondencies and meaningless patterns. This activity is more than just fun—it is the basis of style. A fundamental tenet of linguistics is the arbitrariness of the linguistic sign, be it letter, word or higher unit. Onomatopoeia is the untypical case; in the overwhelming majority of cases the physical characteristics of a linguistic sign are no clue whatsoever to its value in the sign system. Thus there is created the intriguing possibility of reducing the arbitrariness by selection on double criteria. Language teaching pays attention to the organised, meaningful patterning which provides one set of criteria, but tends to ignore the potential harnessing of the arbitrary patterning. Young children are not in a position to distinguish accurately these two aspects. Making the distinction is one part of the skill of language that is being acquired. A four-year-old sits at the typewriter and taps out *xp = twm Vjk,;''s*. He is delighted to have it read back to him because of the unusual noise it makes compared with the noise of English. A compound like *fruitcake* may sound odd to a six-year-old because he does not think of raisins as fruit; *cheesecake* even odder this side of the Atlantic, giving rise to a few experimental new compounds like *soupcake*, *mummycake*, *tellycake*. The children freewheel an important part of their sentence-building apparatus as if it were a fruit-machine, and give themselves pleasure and profit in the performance.

All manner of language games are relevant, no matter how apparently trivial they may seem. There are games where the child

cannot make a mistake, like word-association games; games where the word-hoard comes under simple testing, like *I went to market*; games where analytical skills are involved, like those where one word is changed into another by simple stages of letter substitution; and games of control, like *Simon Says*. Puzzles, too of all kinds, just so long as language plays a major part. In this sort of environment the child will always be aware of the arbitrary patterns of his language, and is likely to grow up in control of them as much as the others.

The next and third suggestion assumes a certain level of competence acquired in the first two; it is the formal exercise. When a measure of control is reached, the pupil can start trying to write in particular styles. Maybe just rhyme at first, or regular rhythm, or description without verbs—the grading would need to be experimented with. Some exercises are nearly mathematical, like the construction of reversible sequences at various levels; the value is in the attempt to select and control within exceptionally limiting constraints. Some are much nearer free creativity.

Each exercise is a different mixture of two motivations. One is a combination of the delight that children take in language for its own sake, and their similar pleasure in solving problems. The other is the need to express oneself, that forms the basis of creative writing of any kind. A balance between these two can be noticed in the works of any stylist, whether the language is literary, scientific, journalistic, or whatever.

6. AN EXTENDED EXAMPLE

For a final suggestion I shall describe an activity that my colleagues and I do regularly with first-year University students of English. Some are already accomplished writers, and some have no confidence at all. The activity lasts for an intensive period of 24 hours, and we have from three to six tutors participating, in a group of about 70 students.

The aim of the activity is to relate linguistic structure directly to the creative process, involving the students as analysts, critics and composers. Throughout, texts are used as models, and in the version I shall describe the texts were all short poems.

The first session is an icebreaker with the whole group, using perhaps Henry Reed's *The Naming of Parts*. The group is invited to compose another stanza in the same style. It doesn't seem to matter which way the group decides to proceed; the essential points emerge, whether one starts at the beginning of the stanza and plods through,

or maps out the broad lines of the structure and then fills in the details. The Reed poem is useful because

- (a) its rhythm is subtle, not particularly fixed but difficult to deviate from successfully.
- (b) each stanza breaks into two parts because of a contrast of styles;
- (c) the stanzas roughly conform to a repetitive pattern but leave plenty of room for detailed drafting;
- (d) the poem can be appreciated at several levels, which leads to contrasting proposals for the new stanza.

It becomes clear that the poem is difficult to imitate, and impossible without a detailed knowledge and interpretation of it and much verbal ingenuity. In part the language is most carefully wrought and decisions in the first line can limit the last line abominably; but also there are parts where one just has to 'lose' several syllables, to pad out a line without damaging the main choices that have been made. It is just as difficult to pad successfully as to find the significant verbal operators with their double or triple meanings.

An encouraging feature of the first session is the keen and detailed way that students will approach the task. They give and take criticism without fear, and are very sensitive to what is characteristic of the style of the poem, and quick to uncover the operative constraints of the meaning. Without realising it, they frequently slip into linguistic argument.

The first session lasts up to two hours, and the leader is lucky if he has even a working draft on the blackboard at the end of it. Next, students are handed another text and asked to do the same sort of job individually and quickly. Here the text has to be a more repetitive structure, like E. E. Cummings' *All in green* or Herbert's *Virtue*. Under an hour is allowed for this, and the students form into several smaller groups for the feedback session, which is quite technical. Students each have their own versions, and are willing to defend their choices with detailed argument. They explore the relation between fixed form and free creativity.

The third session is longer, and has as its text a complicated work of some obscurity. Tutors vary in their selection of text at this stage, because a balance has to be struck between the difficulty of the eventual writing task and the credibility of the exercise as a whole. The introductory sessions use texts with fairly strong and often unusual linguistic patterns; the students have also to be given confidence that all texts of recognised worth are amenable to the same

sort of treatment. One that we frequently use is Eliot's *Sweeney among the Nightingales*.

Work on this text starts with a general interpretative discussion. Style points emerge haphazardly, and the job of the group leader is to point to the relevance of linguistic features in the interpretative arguments. After a while he summarises the discussion, listing the components of style that have been analysed—the characteristic clause structure, perhaps, with the subject occupying an odd-numbered line and the verb starting the next; the consistency of the verb forms until near the end, and the particular use of ambiguous past/present form *let* in the second-last line; the isolation of the clauses by avoidance of co-ordinating conjunctions; rarity of subordinate clauses; ubiquitous definite article and consequent rarity of other determiner choices; and so on. Including rhythmic and lexical points, something like a dozen features germane to the style will emerge. The group will have studied these features, not only as linguistic structures but also in the way that they play their part in the creation of that particular poem.

They will then be asked to make a new poem exploiting as many as possible of the features. Some go off straightaway to do this, and others discuss theme, possible variations etc. The group leader may make whatever arrangements he likes with individuals, so long as the job in each case is closely defined; so that the finished work can be discussed as an attempt to make a pre-determined artefact.

No-one has yet refused. The time schedule is strict because we have found that Parkinson's law applies to this situation. Tutors move around encouraging, cajoling, shaming and often giving help with details, until all the texts are in. Then they are studied by tutors, and finally the feedback sessions commence. The groups are cut down to two or three on an appointment basis, allowing up to twenty minutes per text. Each text is read aloud, and the discussion usually starts with a request for self-criticism. Most of the session is elucidation—trying to relate what has been written to the objectives of the author, within the confines of the allotted task. Many are forced to vary from the prescription, but do so because of the needs of their developing creation, and are able to express the conflict of form and feeling in a precise fashion. A few perform the minimum, constructing lines in slavish imitation of the original, but that, of course, is fully acceptable because the author comes to recognise that the form has dominated his work.

I shall resist the temptation of printing samples of the work,

because its quality is strictly irrelevant to the argument; it is a technical, artificial exercise open to assessment along a range of criteria. Suffice it to say that some of the poems produced under even these circumstances are most impressive, and nearly everyone is surprised, first that his work is taken seriously, in the same sort of discussion that Eliot's was before, and second that it is much better than he thought was possible. It is customary to end with readings of some of the poems, interspersed with other work, and sometimes printing of polished versions for those who want to submit. Everyone submits, and signs his work. The tentative, modest creatures of the previous day have become brazen poets, for the nonce.

The activity I have detailed is illustrative of a theme with many variations. Prose and drama texts have been used; the task has been defined in many different ways, sometimes by individual negotiations like 'what restrictions of form will you accept?' Follow-up sessions to move away from the influences of particular models have been tried, and group creativity, with varying success. University students are not the only customers; it has been surprisingly successful with seasoned overseas teachers of English on British Council Summer Schools, Indian graduate students and many others.

The activity is, of course, a stop-gap effort, heavily remedial, trying to distil a process that should be basic and continuous in Subject English. But it gives rise to effective integration. In the feedback sessions, there is absolutely no distinction between linguistics and literary criticism, between author and critic, between form and content.

I have filled out one example because a great deal of the opinion in this paper is speculative. It seemed worthwhile to set out the stages of one activity that works; for some students it is far more engaging and real than the solemn game of learning to be a literary critic, divorced from experience of the practice of writing under control. In this sort of work, the pupils are developing, and developing their understanding of, their command of their language at an advanced level. A wholly linguistic approach would not do; it might engage the few natural linguists, and the puzzle-addicts, in the group. A literary approach would obscure the terms of reference and reduce the final sessions to embarrassing exchanges of clichés. In studying the act of communication by language and, informed by the study, teaching command of the language, there is no alternative to demolishing the discipline boundaries without compromise and adopting an integrated approach which involves the whole personality of teacher and taught.

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CLASSROOM CONTEXTS FOR LANGUAGE AND LEARNING

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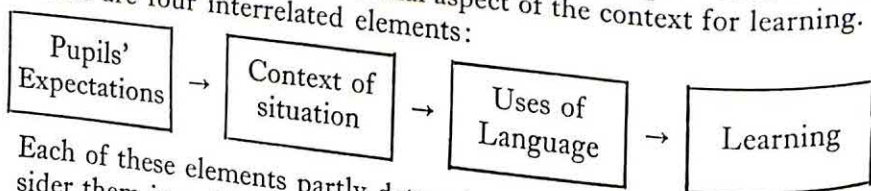
I. INTRODUCTION

ALTHOUGH educationists are at present much interested in hypotheses about socialisation into family role-relationships as these are embodied in linguistic behaviour and the possible effects of this upon cognitive styles, there has been relatively little interest in what would seem to be of equal importance, the socialisation of pupils into classroom roles and the effect of these upon language behaviour and therefore upon other kinds of learning. The classroom is different from the home in that the teacher is held responsible by his employers for the curriculum, for what is learnt by his pupils. Thus we should expect teachers to have a special awareness of the range of role-relationships possible in the classroom, the kinds of language use made available by each of these, and the relationship of kinds of language use to kinds of learning. But most teachers do not have this awareness.

The central inadequacy in teachers' views of language in the classroom can be characterised by saying that they see language in terms of performance instead of in terms of learning. For example, spoken language is still most frequently tested in public examinations through tests which stress the isolation of the speaker (Hitchman, 1968). When secondary teachers set written work their attention is upon the content and form of the finished work: few are aware of the ways in which the expectations and relationships of the classroom affect the kind of writing which will be done. Teachers question pupils to test their knowledge, rather than in order to have them use language as a means of learning. The pupil's use of language tends to be seen as a unified skill, which once learnt can be used in any context. The corollary of this is that teachers take no responsibility for the classroom context for speech and writing.

The purpose of this paper is to argue that teachers' perceptions of the functioning of language in their classrooms need to be radically changed in order that they may take more responsibility for it. This is intended to apply to all teachers, whatever subjects they teach. We must however take care not to substitute for a view of language as an individual skill, an even less adequate view of language as totally constrained by social context, as if we were all puppets. The interrelation in language performance of stable characteristics of the language, the immediate demands of social relationships, and the personalities, intentions and abilities of the participants is extremely complex.

Teachers' perceptions should be based on a theory of language and learning in the classroom which will direct their attention to those aspects of classroom relationships which are relevant to children's uses of language for learning. What matters is not only what the teacher does but also how each pupil perceives what the teacher does, how he perceives the activities in hand and his own place in them. Thus the fact that pupils come to a lesson with expectations about what will happen there is a crucial aspect of the context for learning. There are four interrelated elements:



Each of these elements partly determines the next, so we shall consider them in order from left to right.

2. PUPILS' EXPECTATIONS

To speak of 'pupils expectations' about the classroom, about the roles open to them as learners, about their relationships to the teacher and to one another—and indeed to the subject matter of the lesson—is to do no more than to make abstractions from their behaviour. Nevertheless, this seems justified because much of this behaviour can be changed by changing the pupil's perception of the social situation and his place in it. The expectations must come from two sources: (a) the pupil's experience as a member of social groups outside school, especially in the home; and (b) the pupil's previous experience of lessons, especially lessons with the same teacher.

(a) A pupil's expectations about possible relationships with authoritative adults, for example, or about the possibility of communicating his experiences to others, may be quite deeply embedded in his personality even by the time he enters a junior school. We know of

certain differences in children's language behaviour which correlate with social class: these appear to be not so much a matter of differences in the forms of language available, as differences in the way in which they perceive the situation.

'When working class and middle class children are presented with similar tasks, but undoubtedly different social context, the options taken up by the working class children differ markedly from the options taken up by middle class children.' (Brandis and Henderson, 1970)

Moreover there are probably other patterns in children's language which correlate with social differences other than those related to social class. It is sometimes said that the most inadequate pupils are those whose social experience is so constricted that they have never learnt to adjust to the demands of different persons and situations. On the other hand, it has recently been suggested that some persons are over-constrained by social expectations, so that they do not develop a wide range of linguistic strategies because all situations are 'closed' to them (Bernstein 1970). (A situation is 'closed' in this sense if a child fails to perceive that he could by participating actively in it change the course of events.) Whatever the nature of the expectations brought by pupils to the classroom, they clearly affect their participation in learning.

(b) Teachers can change this behaviour by involving pupils in new roles and relationships which will alter the pupil's perception of the options at his disposal. This does not happen quickly: a class habituated to passive learning will not suddenly participate in active discussion merely because a teacher tells them to. Children's repertoire of strategies needs to be built up over years of schooling, and these strategies depend on the roles which they learn to undertake in the classroom.

Children's language behaviour is not, however, infinitely malleable. Their continued participation in life outside school, and the expectations which they are forming about their future place in the world, may militate strongly against acceptance of some of the rôles which school presses on them. Nevertheless, every teacher and every school has responsibility for what their pupils learn about their rôle as learners, whether for example they see learning as passive acceptance and regurgitation, or as requiring active effort to understand and reformulate. And here the language behaviour required of pupils moment by moment in the classroom is crucial.

Two general aspects can be abstracted from teachers' behaviour as profoundly affecting pupils' expectations about the uses of spoken and written language in the classroom.

(i) The level of the teacher's *Domination* of classroom interaction. This includes both control of subject-matter—how far pupils can affect the course of the dialogue—and control of the style of the dialogue.

(ii) The teacher's *Valuation* of the pupils' contributions. Some specialist teachers who place a high value upon the established knowledge of their specialism place a correspondingly low valuation upon their pupils' participation in lessons. They show this by lack of interest in pupils' out of school experience, by the extent to which they encourage their pupils to verbalise their learning, by their insistence on 'relevance' to their own view of the subject, and by their low valuation of originality as against retention of knowledge.

While Domination and Valuation are often related they are not by any means identical: some teachers who value highly their pupils' participation in lessons set up—consciously or not—strict criteria which constrict the range of participation open to them. We shall examine in the next section some of the means by which teachers communicate Domination and Valuation, and thereby establish in their pupils expectations about the language behaviour open to them.

3. THE CLASSROOM CONTEXT

It has already been made clear that the classroom context is composed not of things but of meanings. Pupils come to each lesson with established expectations, in the light of which they interpret the teacher's behaviour and the rôles open to them. Since their expectations vary so do their interpretations of what behaviour is possible. Thus the classroom context is not in any sense rigid, since it depends in part upon pupils' interpretations of it. This implies that changing the immediate situation may not immediately change pupils' uses of language.

We shall consider the classroom context, therefore, in terms of those dimensions of the situation which it is within a teacher's power to change.

DIMENSIONS OF SITUATION

We must begin with those two aspects of teachers' behaviour which have already been put forward as significant in establishing pupils' expectations—Domination and Valuation. Now that we are dealing

with the way in which the teacher sets up the lesson itself, we must take account of the following aspects of the teacher's moment by moment participation in the classroom interaction.

(i) *The teacher's Domination of classroom interaction*

'Domination' is equivalent to the strength of the teacher's demand for a particular performance; by what he says and how he says it he communicates again and again how much leeway he is allowing to his pupils. It is possible for a teacher so to address and question a class that no child can speak more than monosyllables without challenging the teacher's authority. It is also possible for a teacher completely to abdicate from control: whether this produces chaos depends partly on the expectations established in previous lessons. In general, the less dominant the teacher is, the more effectively do each pupil's expectations, learnt elsewhere, tend to determine his participation in the lesson. (It has, however, been pointed out by Getzels and Thelen (1960) that there is a 'transactional' style of teaching in which the making of decisions by pupils and teachers together avoids both domination and the unclear goals which may result from the teacher's withdrawal.)

(ii) *The teacher's Valuation of the pupils' contributions.*

The teacher, if he chooses, can impose certain purposes upon the pupils: the next four categories can be seen as specifying aspects of the pupils' language behaviour which the teacher's Domination can be seen to operate upon.

(iii) *Task orientation*

Sometimes the language in the classroom will be directed towards carrying out an action, as in a discussion to decide what to do next, or in a letter inviting a visitor to the school. Much of the language used in school, however, has to be its own justification, and can have no practical outcome. When teacher and class unite in discussion of a topic for its own sake, perhaps sorting out some new knowledge, or exploring possible responses to a poem, the function of the dialogue is quite different from discussion directed towards action. (This distinction is discussed extensively by J. N. Britton, 1970.) But a further distinction has to be made. This kind of joint exploration, whether or not it is directed towards action, is again different from what are usually called exercises—language used to practice a skill rather than to say something. And the same is true of written language. Thus the simple dimension 'Task-oriented—self-justifying'

has to be modified to take account of pupils' acceptance of the activity as meaningful.

(iv) *Originality*

The teacher may, by his questions, by the way in which he sets up tasks and activities, and by the way in which he receives whatever his pupils say or write, show that he values most highly the meticulous reproduction of what has been taught, or that he expects pupils to reshape, interpret, and make suggestions.

(v) *Abstraction*

It has been shown (Lawton, 1968) that when pupils are required to describe or narrate they use language differently from the way in which they use it when required to make abstractions.

(vi) *Content versus Manner*

The teacher may show that he values what is said above how it is said, or vice versa.

Whereas Domination and Valuation are abstractions from the whole of the teacher's classroom rôle, it is possible to isolate the behaviour which carries these out—and which communicates approval or disapproval of Originality, Abstraction, and so on.

(vii) *The teacher's Presentation of a task*

When the teacher is not highly dominant, 'task' will be a misnomer. The nature of the classroom dialogue, or of any writing done will be established by consensus, or decided by the individual. The explicitness with which the teacher presents a task, and indicates what kind of language is acceptable, will only be critical therefore at higher levels of Domination. (N. E. Flanders, 1963, has elaborated a theory which relates pupils' level of dependence, the directness or indirectness of the teacher's influence, clarity of goals, and the extent to which the goals are perceived as desirable by pupils.) Related to explicitness is the teacher's ability to make public the criteria of success or failure, when this is appropriate. Some teachers are so little able to do this that pupils are left to guess what is wanted more by attention to the teacher's hints than by understanding of the matter in hand.

(viii) *The Teacher's Reception of pupils' speech and writing.*

'Reception' refers to the teacher's main immediate means of influence. When a teacher is spoken to by a pupil, or receives a piece of writing, he may reply to it, or comment on it, or assess it; and his

habitual choice amongst these three will influence his pupils' future uses of language: no-one readily embarks upon personal reminiscence when he expects to receive in reply a cool assessment of his delivery. But the teacher's influence is still more pervasive: a snub or bored acceptance, or an interested or enthusiastic reply all have immediate as well as long-term effects. When a criticism is made it can vary both in intensity and in the degree to which it is publicly made. Other pupils also play a part in establishing expectations about the reception which speech or writing will receive, and the teacher must take responsibility for these too.

Although Reception is often the means by which the teacher's Domination or Valuation is communicated, it can also operate separately and in a different direction. For example, teachers who wish to encourage their pupils to participate in lessons may unintentionally limit this participation by emphatic criticism or by insistence on particular forms of speech or writing.

(ix) *Teachers' Linguistic Style*

Since language communicates not only its manifest content but also latent information about status and group membership, it is likely that the teacher's speech style will affect pupils' participation in dialogue. For example, excessive use of the language of a specialist subject—in textbooks as well as in speech—might tend to exclude all pupils except those able to contemplate joining the specialist group. Social class markers possibly have a similar effect. Little is definitely known about this, however.

So far we have been dealing with the teacher's direct influence on pupils by his participation in the stream of classroom interaction. We now turn to dimensions of the classroom context which are equally under the teacher's control, but which have greater permanence and objectivity. The next three categories relate to what might be called 'Social Distance'. (The word 'audience' has been used, although it is not only one-way communication that is referred to.)

(x) *Size of the audience, or group, or extent of expected readership.*

(xi) *Status relationship with members of the audience.* This includes both permanent relationships such as pupil-to-teacher, and those temporary roles which become available to pupils in the course of a lesson.

(xii) *Familiarity with audience*

Not only does the introduction of strangers into the classroom have a marked effect on language behaviour, but so does the relative intimacy and mutual trust of the pupils themselves. Lack of familiarity also plays its part in the effect of the 'infinite audience' which occurs when, as in broadcasts or printed publications, the composition of the audience cannot be foreseen.

(xiii) *Spoken-Written*

Although speech seems more readily adjusted to improvised exploration, and writing to highly organised statement, these are not immutable characteristics. (Differences between speech and writing are discussed in Vygotsky 1962, Trim 1964, and Brazil 1969.)

(xiv) *Assumed Role*

This includes speaking or writing in one's own person or in an assumed rôle, as in improvised drama—and there are no doubt intermediate forms.

(xv) *Monologue-Dialogue*

This factor, which is separate from size of group, relates to whether the speaker is totally responsible for organising the utterance, or whether it is partly organised in response to what other participants say.

(xvi) *Improvised—Prepared*

The extent to which pupils are shaping their speech at the moment of utterance is not entirely in the control of the teacher, and may often itself be a response to situational pressures such as social distance or expectation of criticism.

(xvii) *Stimulus Distance*

Speech or writing may refer to subject-matter which is: represented by something present in the room; or recollected from past experience; or available only at second hand (e.g. from books); or imaginary. An exchange not heavily dominated by the teacher can move rapidly from one to another.

(xviii) *Concurrent Activities*

Language used while a pupil is manipulating apparatus may function as part of that manipulation, and therefore differ (for example) from language used to plan the manipulation in advance.

The last category to be listed cannot justly rank as a dimension of situation, yet it must appear here both because it is partly in the teacher's control, and because it powerfully influences pupils' language.

(xix) *Pupils' Attitudes to Subject Matter*

What matters here is whether each pupil perceives the topic as within his range of interest and competence. This has been shown to influence examination essays written by sixteen-year-olds (Rosen, 1969). The teacher is not only able to choose the topic, but also can consult his pupils. Moreover, it is not difficult to give pupils an overall sense of incompetence in a given subject area—or even in the curriculum as a whole—which will profoundly affect their written and spoken language.

These nineteen categories are clearly not parallel: the relevance of middle-level categories such as Orientation or Originality depends on the high-level Domination and Valuation, and they are made effective by behaviour belonging to low-level categories such as Presentation or Reception. These last are categories related to the teacher's moment by moment behaviour; he also controls more objective dimensions of the situation, such as Stimulus Distance.

Attempts by sociolinguists to map speech contexts in general have displayed categories different not only from these but from one another (Ervin-Tripp 1968; Hymes 1968). The analysis by Getzels and Thelen (1960) of the classroom as a social system places its emphases differently again. Many of the categories adopted in the present paper are necessarily arbitrary; they have been chosen to focus attention upon those aspects of the classroom context which influence language and which teachers might learn to take deliberate responsibility for.

4. USES OF LANGUAGE

It is not enough, of course, for a teacher to be aware only of his control of aspects of the classroom context; he must be aware of the effect of these upon his pupils' uses of language. As M. A. K. Halliday put it, teachers must 'learn to listen to language' (Halliday, 1968). Too many teachers perceive little more of their pupils' writing than its content, and the spelling and punctuation, or little more of their speech than its audibility or use of low-status forms. Much of teachers' awareness of language will always have to be intuitive, if only because teaching usually requires rapid responses. Yet, underlying every teacher's intuitive perceptiveness of what his pupils say

and write, there should be a more systematic understanding than is available at present of the ways in which context is likely to affect both the nature of children's language and its quality. To take a positive example, it seems likely that the best successes of the so-called 'creative writing' movement have been achieved because some teachers, ceasing to dominate, have provided stimuli, a sympathetic audience, and (unintentionally perhaps) a rather undemanding semi-poetic model, and have left pupils to choose the topic and form.

In order to provide a theoretical background for this understanding there is an urgent need for studies of children's language in relation to context, a need, that is, both for research studies and for informal studies of the kind which groups of teachers can carry out. Psychologists researching in the development of children's language however have assumed almost unanimously either that context of situation could be ignored, or that an example from one context could reasonably be taken to represent all. This false assumption is shared by many teachers, who tend to behave as if children's use of language depended solely on the tasks given and the children's ability. Indeed, this often accompanies the assumption that language uses constitute a single skill which can safely be left to English specialists. It is in this way that teachers have remained so long unaware of the effects of situation.

For example, it would be valuable to teachers to be more precisely aware of the differences in dialogue which are related to variations in what we have called 'Social Distance'. Let us simplify by contrasting a small group of intimates with the full class of thirty or more—especially if the latter is a 'set' brought together for a few lessons each week. The intimacy of the small group makes it possible for the talk to be hesitant and exploratory, full of hints and false starts, lacking an overall plan yet allowing the exploration of first-hand experience. The full class, however, demands a public style which must be explicit, well-planned, and perceptive of the needs of non-intimates. (These differences could be displayed formally in terms of syntax and coherence features as well as functionally.) Not all pupils are capable of such a public style: greater understanding of the source of these linguistic differences would help teachers to recognise such incapacity and deal with it. Many teachers fail to recognise that the exploratory language has important functions in learning when pupils are grappling with new knowledge. This is, however, no more than one example of the kind of perceptiveness about language which would help teachers to teach more effectively.

5. LEARNING

A theoretical account of the part played by language in classroom learning would not stop short at the language, but would go on to relate different uses of language to different kinds of learning. Although English specialists, and many primary school teachers, see it as their task to extend their pupils' control over language, other teachers—and especially secondary specialists—have their attention focused upon the subjects they are teaching and believe that pupils' language should be left to their English colleagues. (In this they are probably short-sighted.) They would, perhaps, wish to understand how language contributes to learning, but find it hard to obtain advice about this.

Many questions are at present unanswered—and are almost unasked. What part does language play in different kinds of learning—problem-solving, interpreting visual evidence, developing aesthetic response, planning practical methods, gaining insight into other people's values, and so on? Is it equally important in all of these? Does its importance change as the child grows older? Do children differ one from another in the extent to which they use language for thinking? How important is it for children to verbalise aloud in learning? Or is it the inner monologue which really influences learning? And if this is so, how can we make external dialogues change the patterns of interior monologues? (See Ervin-Tripp, 1968). In spite of greatly increased interest in language we have hardly begun to know how it functions in classroom learning. Let us, however, take note of warnings (Tyler, 1967) (Levy, 1969) against any naive expectations that comparative research will provide clear empirical evidence that one kind of interaction promotes better learning than another.

Although this paper has been largely devoted to discussion of the classroom as a sociolinguistic context, it is important to avoid deterministic assumptions about children's language. Children have personalities, interests and purposes of their own. We cannot ignore their stance before experience, yet it is equally important to recognise how much it is shaped by what happens both in the classroom and out of it. Language carries both manifest and latent content; what we say communicates ideas and attitudes, yet at the same time it almost imperceptibly negotiates social relationships, confers or rejects status, and constrains or opens up roles. Language, indeed, offers us both routines and options at every level from the phonological to the sociological. Children growing up need both to learn

the routines so that they can fit in, and to operate the options so that they can participate actively in shaping the lives they share with others. What children learn at school is not just the manifest subject-matter; they also learn latently what is expected of them as pupils, how they have to fit in. (Some educationists—for example, Jackson, 1968—call this 'the hidden curriculum' because it is the part of learning which teachers fail to take responsibility for.) If pupils learn only how to fit in, and not how to use the leeway which exists, then their education is failing them.

It is not only that in order to participate fully in adult life pupils will need to have had experience of a wide range of speech roles. We cannot rigidly separate cognitive from social learning: classroom interaction is one determinant of curriculum. If we constrict pupils' classroom roles we constrict what they learn. If teachers genuinely want to develop in their pupils critical habits of mind, or ingenuity in setting up new possibilities, they must put their pupils into situations which demand critical activity, or encourage freedom in generating hypotheses. To put it bluntly, too many children spend too much time vaguely listening and then regurgitating: throughout the curriculum they should be required to use language for playing with stories or ideas, for exploring things and people, and sometimes for organising thought and feeling explicitly. And this will require teachers to use far more inventively the linguistic possibilities of the classroom. It is not too much to urge that the study of language and classroom learning should not only be part of all initial teacher training, but should be available to all experienced teachers as part of inservice training.

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BOOK NOTICES

- T. O. LLOYD, *Empire to Welfare State—English History 1906-67* (O.U.P.)
IVOR MORRISH, *Education Since 1800* (Allen and Unwin)
D. W. SYLVESTER, *Educational Documents 800-1816* (Methuen)
Studies in the Government and Control of Education since 1860. History of Education Society (Methuen)

These represent an interesting range of books for use in schools and colleges, from the traditional text-book to the collection of original documents and the results of researches by individual scholars.

The Oxford Histories have long been regarded as synonymous with sound historical scholarship and are obviously essential books in any History library. A worthy addition to a school or college library is *Empire to Welfare State—English History 1906-1967*. This is a volume in the Short Oxford History of the Modern World series, which is attempting to cover more than the ground of the Oxford Histories. It is a three-fold series consisting of volumes on European history and English history and a third larger group of books which will serve as introductions to countries and societies now recognised as important to the student, a notable example being Latin America. Prof. Lloyd's book attempts in 400-odd pages to cover the last sixty years of English history up to 1967, and it does so admirably. It treats the period chronologically and traces the political changes, but, as its title suggests, it also considers the period through a whole spectrum of themes—economic, social, literary, sociological, scientific—and sums up each phase in an illuminating way. In such an exercise, compression can so easily be the enemy of comprehension, but Prof. Lloyd through his style and selection of material is proof against charges of oversimplifying his period or confusing his readers. The book can be criticised—some topics are treated almost too briefly in comparison with the very detailed analysis of the economic situation; the excellent maps and charts are unfortunately gathered together in an appendix—but these criticisms are minor. They do not detract from the virtues of a book which is consistently absorbing, novel and readable.

Little can be claimed in respect of novelty for *Education Since 1800*. Such a text-book may even seem difficult to justify, but, to give Mr. Morrish credit, he does attempt to do more than follow the furrows ploughed by others. It is arguable, however, that the way to make History of Education acceptable to student teachers—and patently it is not acceptable to many at present—is not to produce slimmer and sketchier text-books, packing 170 years into ever fewer pages, but to identify real

issues in education and to illustrate how these have been resolved in the past. Where Mr. Morrish escapes from a traditional treatment of events, he very usefully considers recent reports and legislation, assesses their importance and shortcomings and backs this up with valuable bibliographies. The final section on educational thinkers is possibly an unsuitable addition to the basic text. Not only can one query the choice of individuals and the treatment of a mere handful of them, but also seriously challenge the attempt to do anything worthwhile about educational thought in such a short section.

Mr. Morrish makes numerous references to other text-books, including *Maclure, Educational Documents England and Wales 1816-1967*. This has established itself so firmly as an essential reference book that it is pleasing to see a companion volume, *Educational Documents 800-1816*, by D. W. Sylvester, covering the earlier period. On the assumption that colleges and departments of education recognise the value of studying the History of Education before 1800, I am confident that this book will prove to have a usefulness comparable with that of the earlier volume. In covering the thousand years up to the early nineteenth century, the book illustrates some of the educational questions which have been faced over the centuries, and the ideas and institutions which have been influential at different periods. The range of extracts is wide and extends far beyond the traditional, even hackneyed, topics in History of Education, and it is good to see questions like liberal and vocational education illuminated by extracts on medieval universities and the education of craftsmen and gentry. Unusual and delightful too is the cut and thrust discussion on the Grand Tour by Richard Hurd, Bishop of Worcester. It might be argued the selection is overweighted with early documents on the classical curriculum, which is furthest from present day issues and also most difficult for the student because of unusual expression and spelling and references to unfamiliar classical authors. Judicious use of the extracts and their intrinsic interest and novelty should overcome these difficulties and Mr. Sylvester's book will, I feel sure, prove to be the basis of profitable discussions with students.

A newly formed association for the promotion of the study of the History of Education is the History of Education Society. Its first major publication is *Studies in the Government and Control of Education since 1860*, a collection of five papers delivered at the annual conference of the society in December, 1968, at the end of its first full year. The papers discuss the general question of control in education at present and in an historical perspective; the traditional view of the role of government in education in the nineteenth century; the technical instruction committees and their functions, foreshadowing the changes brought about in 1902; the growth of secondary and higher education in Wales; and the differing pattern of Scottish educational administration at the beginning of this

century; all could be valuable as a basis for discussion with students. The society is to be congratulated on producing a volume of considerable interest and sound scholarship so early in its life.

PETER BOYERS

D. F. SWIFT (ed.), *Basic Readings in the Sociology of Education*, (Routledge and Kegan Paul, 1970, 301 pp., £2.50.)

THIS is a collection of journal type articles designed to illustrate the theory outlined in Swift's early volume *The Sociology of Education*. It is, however, badly integrated. There are eighteen documents divided into five major sections: sociology and education; the social animal; the school; the social environment and the institute of education; and the social functions of education. Each section begins with an introduction by the editor but these are too short and not adequate to make any section a satisfying entity.

To use the editor's own words, the articles were 'chosen for the value of their analytical or conceptual approach'. However the Reader taken as a whole fails to indicate what sociology has to offer to problems posed by the education process or to provide a definitive structure for the organisation of the subject.

As an assembly of articles designed to accompany a previous volume, it serves just that need. Its wider usefulness depends rather on its extensive bibliography and suggestions for further reading.

JULIA EVETTS

JAMES BRITTON, *Language and Learning* (Allen Lane The Penguin Press 1970, £2.50)

A WRITER who adds his work to the forty-odd titles currently available in the form 'Language and . . .' risks being overlooked in the crowd and jostled by some potent names in the process: Professor Britton's book is of a quality which should preserve him from the first danger and entirely remove the second. The title is, in fact, a bold ellipsis, since it prefaces an attempt to provide some account of the processes involved in learning language, as well as an exploration of the key role of language in symbolising experience and thus enormously facilitating learning.

The book's 'interleaving' pattern provides perhaps the only workable solution to the problem of relating these two themes. Chapters 2, 4, 6 concern themselves primarily with what the author calls 'lengths of life'—the pre-school years, primary school experience, the secondary school and the wider world of the adolescent. In these sections, parent and teacher alike will find the most directly appealing material, as the theoretical complexities of language acquisition and use are patiently presented and most skilfully and entertainingly illustrated with examples from children's speech and writing. There are two great strengths in these chapters: the first is that the author is not content merely to present a synthesis of theory,

research and speculation; he zestfully takes sides and offers new emphases and interpretations for old. Thus, Vygotsky's account of the internalisation of egocentric speech is preferred to the Piagetian explanation; G. A. Kelly's notion of an innate drive in the child to explore the world, with speech as its principal instrument, enthusiastically elaborated. The second strength derives from the use of a powerful linking theme: the importance of talk at *all* stages of development. Talk to regulate behaviour, talk with adults to offer opportunities of a glimpse at another point of view, talk to order first-hand experience, talk in a 'participant' role to provide the most efficient education in listening, talk to stimulate the emergence of a stable identity, independence and awareness of role; Professor Britton's exposition stresses the need for formal educational agencies to provide the most effective contexts in which all this can take place. The message for the teacher is well summarised in Britton's quotation from Georges Gusdorf: 'Such is the task of the teacher if, going beyond the monologue of instruction, he knows how to carry the pedagogical task into authentic dialogue, where personality is developed'.

If chapters 1, 3, 5 cohere rather less satisfactorily than those they accompany, this is partly explicable in terms of their concerns; the relationship of language and experience, the distinguishing of 'spectator' and 'participant' roles in using language and the interaction of language and thought. They are central to the development of the author's ideas, but the need to compress their complexities leads, in one chapter at least, to some loss of clarity and elegance in argument and elsewhere to the relegation of important issues to asides—as, for instance, the effect of family social structure on linguistic development. In contrasting the 'spectator' role with the 'participant' in our use of language, Britton develops a proposition of D. W. Harding's and later links this to a mode of categorising speech and writing—here 'expressive' speech stands at the centre and moves towards the 'transactional' or 'poetic' as the role moves in the direction of participant or spectator. The related arguments, speculations, hypotheses and qualifications cause these sections to sit a little uncomfortably in the context of the rest, seeming to issue their challenge to quite another reader than the one addressed elsewhere. The admittedly speculative chapter on language and thought provides a penetrating analysis of Bruner's work, effectively arguing the case that we are in danger of imposing a disjunction between thought and feeling, of overlooking the importance of what the author calls 'non-discursive mental processes', which at the highest level of organisation are embodied in works of art.

'Any response we make to what confronts us will be a fuller and subtler response than anything we could put into words': Professor Britton's own conclusion might stand here, in a changed context, as an indication of the rewards this most stimulating book has to offer the reader.

W. S. HARPIN

DAVID JACKSON (Ed.) with photographs by JIM COTTRILL, *Springboard* (Harrap & Co., 1970).

Springboard is an outstandingly good collection of modern short stories intended for the middle school. Ideally, the English teacher discovers his own material; in fact he would have great difficulty in unearthing eleven stories (from eleven different publishers) so well fitted to the children of this age group. The themes include a visit to a fair, a game of space warfare, the making of model ships, keeping a pet animal, pursuing a wild bear, the death of a grandparent, a fatherless boy's jealousy lest his mother should remarry, a girl's first visit to a hairdresser, the first attempt at flight of a young gull, a child's disillusion over Santa Claus and, from the inimitable Patrick Campbell, a wildly funny classroom scene. Some of the stories will be beyond some of the children; equally some of the children will scorn some of the stories. But there is something for everyone, something to stimulate interest which will, after classroom discussion, produce good writing. The names of one or two authors will show the quality of the work: D. H. Lawrence; Stan Barstow; Sid Chaplin; Liam O'Flaherty.

If this collection of stories has a weakness, it is that they deal more often with boys than with girls. Happily, the photographs redress the balance. They are not illustrations of the stories; they are in fact quite independent. They show boys and girls in situations that are easy to appreciate; boys playing football; a girl swinging; a boy clowning; a girl caring for a baby; a girl using a lipstick; a boy examining a gun; boys and girls at work in a classroom; a tiny girl preparing to be a bridesmaid. Here is material for writing to which some will respond more readily than to the stories. These photographs are of excellent quality, well printed. They should stimulate lively writing.

I commend the book to the English teacher without reservation. He will enjoy the book himself and share the pleasure with his class.

H. C. HONEYBONE

RONALD G. CAVE, *Partnership for Change: Parents and Schools* (Ward Lock Educational Limited, 1970 £2.10)

IN 1963, about to embark on a research project, I had the impression that in more than one respect the problems of parent-teacher relations were similar to those of homosexual relations—for the inevitable question which arose in discussion of the topic was, 'What on earth do they do when they get together?' Since the trumpet blast from Plowden, and the consequent swelling of the home and school chorus, we need no longer be in ignorance of what is going on among the more daring and permissive experimenters. Though one still has the feeling that some heads and teachers consider the changes towards greater frankness and intimacy to be of such impropriety that, if allowed to spread, would undermine the moral fabric of our

society. Nevertheless, the change in the climate of opinion is remarkable. Under 'Experiment and Innovation in Home-School Relationships' Elizabeth Goodacre's bibliography gives only one reference dated 1964; whereas twenty-eight are listed for 1967. I have no doubt that since then the voices have multiplied even more considerably—perhaps with the likelihood of too little variation on the same theme.

The latest, Mr Cave's *Partnership for Change*, does, I believe, succeed in saying something different, by tracing the change in parental attitudes in relation to the growth of compulsory education from School Board to Seeborn. There is a parallel over the years with the attitudes of teachers: acquiescent in the main towards administrative decisions, until very recently when, as a consequence of the innovation explosion, both parents and teachers have been roused to challenge the assumptions underlying the proposals for change. Mr Cave instances the imposition of the eleven plus as being instrumental in arousing public and professional opinion to demand greater participation in the formulation of education policies. It is unfortunate that too many teachers have been reluctant to enlist the support of parents in a genuine partnership for change.

This is my only strong reservation about the book, that it does not explore critically enough the problems and dilemmas inherent in the proposals for partnership—the disturbing fact for instance that, where a head is determined to keep parents at arm's length, there is little or no right of redress. However, one can understand why, on such a controversial issue, the author chooses to point the way forward by examples of good practice (culled mainly from the village colleges of Cambridgeshire, where the notion of close school-community links was cradled and fostered by Henry Morris). His account of a wide variety of innovations (supported by a well-chosen selection of photographs) demonstrate convincingly that, given professional initiative and goodwill, increasing numbers of parents can be persuaded to become partners in the education of their children. I hope it finds a place on the bookshelves of many homes and schools.

PATRICK McGEENEY

PETER WORSLEY et al. *Introducing Sociology*, (Penguin Books, 1970, 416 pp., 0.75 paperback) and (eds.), *Modern Sociology: Introductory Readings*, (Penguin Books, 1970, 511 pp., 0.75 paperback;) MARGARET A. COULSON and DAVID S. RIDDELL, *Approaching Sociology: A Critical Introduction*, (Routledge and Kegan Paul, 1970, ix + 130 pp., £1.40)

THESE two works are strikingly different responses to the seemingly insatiable market for introductory texts in sociology. *Introducing Sociology*, by Peter Worsley and seven of his Manchester colleagues, has been tested in draft as an undergraduate text and is a set book for the Open University

Social Sciences Foundation Course—'exciting and wholly original' says the blurb. Exciting it certainly is not; and its originality only consists in its contents not being published before, for they are fairly representative of contemporary British sociological orthodoxy. It comprises two introductory chapters on 'sociology as a discipline', and sociological methodology; four on institutions—family, education, industry and the community; finally two on social stratification and 'the problem of order'. The majority of chapters cover a lot of material clearly and competently—perhaps Valdo Pons on community most successfully. The least effective are Worsley's own introduction—a difficult enough task anyway—which is bitty and at times confused; and the final chapter which valiantly tries to encompass a disparate variety of topics (religion, meanings, deviance, power, conflict and politics) under an unhelpful conventional rubric. But one's lack of enthusiasm for this book is due, I suspect, less to the defects of the authors than to the very notion of such introductory textbooks. There is also a useful volume of readings to accompany it.

Coulson and Riddell's *Approaching Sociology: a Critical Introduction* is a much more interesting book, written in an easy conversational style, though somewhat deceptively titled. It is 'critical' in a rather special sense, towards what the authors expect students will be taught in British sociology courses. 'We are satisfied if you have been provided with some basis to challenge your teachers' say the authors in conclusion to their readers. The book is consistently committed to explicit political viewpoints, and, in its theoretical stance, to that contemporary offspring of Marxism that labels itself 'structuralism'. Jargon is criticized unless it is Marxist after exposition as before). The bibliographical section is consummately biased; dark allusions are made to 'intellects of the calibre of . . . Hochfeld, Markovic and Supek' who are, and are likely to remain, unknown in Britain; and the only journals commended are Marxist ones, including the *New Left Review*, which is somewhat absurdly inflated as the best British journal in 'historical structuralist sociology'. Yet despite their prejudices Coulson and Riddell have written a forceful and coherent exposition of a particular theoretical approach and one which might well contribute more to a student's sociological education than blander, more balanced introductory texts—provided that it doesn't itself meet with uncritical acceptance. Let us hope that dialectic will prevail here too.

J. D. Y. PEEL

W. McD. CAMERON & MARJORIE CAMERON, *Education in Movement in the Infant School* (Basil Blackwell 60 p)

THERE are not many recent books on Physical Education in the Infant School and this publication should be of considerable help to teachers both in schools and colleges of education.

The book is intended as a 'signpost to indicate the way and not a vehicle to carry the teacher'. The material is clearly structured and the analysis of Rudolf Laban's principles of movement is straightforward and easily applicable to Infant teaching. The specific advice on planning and organisation should give confidence to those who lack experience in this work.

The authors never lose sight of the teaching situation and their own expertise is evident throughout the text. The role of the teacher is discussed and emphasis is laid on the need for constant help, stimulation and guidance. Suggestions are given on how to observe constructively so that the reader is made aware of the individual requirements of the children and we are reminded that 'the Infant school is not to be thought of merely as a preparation for the Junior school'.

The aspects of gymnastics, dance and games are separated for the sake of clarity, although the title suggests that they all come under the umbrella of 'movement'. It is perhaps understandable that the chapters on functional movement should be more clearly defined than the section on the more expressive aspects of movement, but in all three areas the emphasis is on purposeful experiment.

The effectiveness of 'stills' of movement is a debatable point but some of the illustrative material is helpful, particularly in the gymnastics section. The attractive cover photographs of children in action are an indication of the lively content of this book which successfully combines theory with practice.

C. ROBERTS

DEREK BIRLEY, *The Education Officer and his World* (Routledge & Kegan Paul 1970, £1.75, £1.15s).

It seems paradoxical, infers Mr. Birley, that there are so few books on the administration of education. Certainly, no other public service costs the ratepayer so much and few arouse such controversy by their decisions. This book gives us an idea, not clear, but the more realistic for its obscurity, of how education officers work.

Little more than a century ago, the Taunton report set the pattern for the Englishness of English education. 'Every arrangement which fosters the interest of the people in the schools, which teaches the people to look on the schools as their own, which encourages them to take a share in the management, will do at least as much service as the wisest advice and the most skilful administration.' Ever since, those responsible for the local provision of education have had to learn how to manipulate the uneasy balance between the participation of people; managers and governors of schools, members of committees and their own ideas of educational and

managerial efficiency. Mr. Birley prefers that the administrator should be a 'committed educationalist', but shares with us his fears that the professional managers and computer experts are eager to try their skills on the educational tangle.

Mr. Birley concedes that most of the key decisions are made by the central government, which decides staffing quotas and building programmes. Teachers' salaries and allowances are prescribed by the Burnham committee. Even within his own empire, the education officer recognises his dependence on advice. On the preparation of the Estimates, which govern the money he can spend, Mr. Birley writes 'Considering how crucial the exercise is it can hardly be said to be well done in most education offices'. The employment of an accountant is recommended. Even 'the filing system is often the office joke', but 'good equipment can make a difference, not least in showing how seriously the business is taken'. A good consultant is useful. For guidance on the curriculum the administrator will turn to professional advisers: 'They can be most valuable of all in advising the education officer about the basic purposes of the service and the techniques by which they can be obtained'.

The education officer is a decision-maker, programmed by experts in their own fields. What, then, is his own distinctive contribution to the quality of education? 'The education officer's characteristic insight is the result of apparently chance confrontations, more like catching a butterfly than building a philosophy. In discussion, there may be a flash of recognition, a half-hint or a by-product recalled and mulled over later.' He learns the job by doing it, develops hunches of what will work and whom to trust and, like his most effective chairmen, enjoys the power derived from his knowledge of the system.

Mr. Birley has left the Office to become Director of the new Polytechnic for Northern Ireland. He looks forward to the time when detailed administration will be handed over to the schools and colleges themselves, by education officers set free for planning, research and the broad direction of policy.

This is a useful book, both for those who seek basic information on how a Local Education Authority works and for those who already know the achievements and frustrations of working in one. The information is there, although you may have to hunt for it. For the initiated, it is remarkable how Mr. Birley manages to catch the feel of the Office. Bitty and congested with unpruned verbiage, repetitive but flashing at times with insight, the book has a genuine ring about it, as if written between committee meetings.

FRANK SHERWOOD

The Foundations of Language

talking and reading in young children

ANDREW WILKINSON

*Reader in Education in English, School of Education,
University of Birmingham*

The recent impetus to the study of language given by linguistics and psychology has made us increasingly aware of the central part language plays in learning. Yet many of the research reports are obscure and difficult to obtain. This book attempts to provide a clear introduction to the field. The first part concerns basic linguistic concepts; the second, illustrated with tape transcriptions, deals with the growth and development of language in the young child; and the third covers the principles and practice of reading and its relationship to general language development. The book should thus meet the needs of the colleges which require a course on language, including reading; and of the experienced teacher and advanced student who wish to get their bearings in the field of psycholinguistics. The book contains a bibliography for the student; and a comprehensive list of readings for the research worker. 224 pages stiff card covers 19 91101 6 50p net



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THE CONTEXT OF LANGUAGE

EDITED BY ANDREW WILKINSON

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